

OVER FIFTY PRODUCTS REVIEWED & RATED



Everything you need to get started programming in C.
DICE is the most powerful shareware C development system available. It includes a compiler, linker and text editor. Use DICE to write your own programs or in conjunction with the example programs in the

free cover-mounted book

Full source code for the latest version of the address book program, as detailed in our C programming tutorial ASPaint

Full source code for the latest version of the AMOS paint package, linking in with our AMOS Action tutorial

Nexus Backgrounds

An example image from the Nexus Pro range of digitised background pictures

Bumper Xmas present list inside:
Image Engine • the Video Toaster
and Prime Image Converter • KCS
high density floppy drive • Blitz
Basic • Caligari • One Stop Music
Shop • GigaMem • hard drives •
printers and much much more...

public domain, C programming, AMOS and AmigaDOS, the latest news, and all your problems solved in Amiga Answers







THE JAKKI BRAMBLES COLUMN

Well OK then you Mums and Dads, it's that time of the year again when letters to Santa are coming your way.

We get a lot of phone calls at this time of year from you guys because it really isn't that easy to decide which of the mega bundles to buy. So this month we have an easy guide to help you make that really important choice.

Amiga 600 Single Drive - The ONLY home computer for less than £200. Suitable for the child fed up with paying out £40 for software for their Megadrive (software available from £9.99) or for the first time buyer. There are hundreds of software titles available including games, education, word processing, home accounts etc. Games available include strategy / role playing, titles where imagination is more important than aggression, learn to create animations not zap aliens aimlessly. Age Group 8 - 13 A600 Hard Drive - A more serious version of the above. The hard drive saves repeatedly loading and swapping floppy disks. Suitable for serious games players and applications such as database management for a student or home office environment. The Epic Pack is particularly useful for a foreign language orientated student. Age Group 12 +
Amiga 1200 Desktop Dynamite - The perfect solution for the student. You want him or her to have a computer to produce

school work using quality Desktop Publishing software, he / she wants a dynamic games playing machine. This gives both of you what you are looking for. The software alone is worth over £300. You can expand this computer through the addition of hard drives, extra memory, accelerator boards whatever the option most suitable for producing any number of serious applications. Want to be a graphic artist, video producer, film director, cartoon animator, musician, mathematician, designer.... the only limi-

tation to the machine is your imagination. Age Group 14+ Amiga CD32 - The choice for existing Amiga owners looking for the latest product in the range or for the dedicated console owner. Knocks the Sega for six with its State - of - the - Art graphics. (Colours on screen Sega = 64/CD32 = 256 or 262,000) and processing speed (Sega = 16-bit / CD32 = 32-bit) To you or me this means that people who write the games can now display more colours on screen and the action can be even faster. Also be aware this is also a Compact disc player with full four voice stereo sound so you can play your favourite CD's when the kids are at school. Connects to standard TVs and most hi - fi's. Age Group 10+

I hope this info assists. With Commodores help I'm certain that there will be thousands of happy smiling faces on Christmas Day, but if you're still not sure give Indi a call they will be delighted to help.

P.S. Indi tell me that they are able to extend the "At Home Service" on most new Commodore products to a full 3 years for as little as £39.99 through their agreement with ICL, the Giant European Warranty Company. Might be worth checking out for that extra peace of mind.



BUY NOW PAY 1994!!!!

AMIGA CD32

Lemmings, Oscar, Diggers



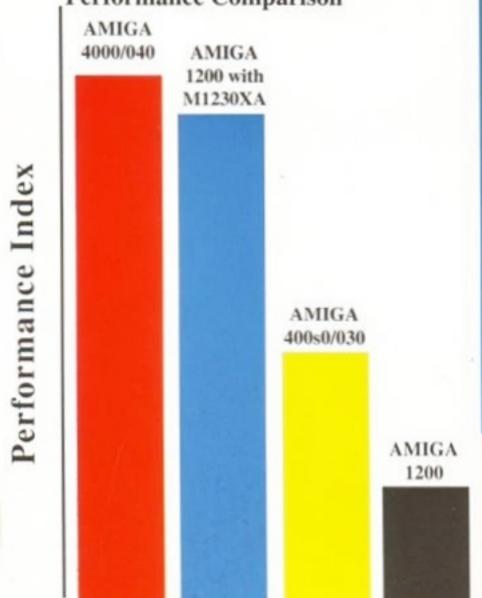
Amiga CD32 is a technological wonder. At it's heart is the mightily powerful 68EC020 processor from Motorola. This contains the 32 - bit technology which has made the Amiga 1200 a runaway success throughout Europe. Alongside it is Commodore's unique custom AGA (Advanced Graphics Architecture) chipset - comprising three chips nicknamed Paula, Lisa and Alice.

The exterior may be sleek but lurking inside the

Together they make Amiga CD32 and awesome powerhouse of high speed graphics and stunning sound capabilities. In fact, the machine can display 256,000 colours on screen (compared to Sega's Mega CD which can only display 64) and has a total colour palette of 16.8 million colours.

Amiga CD32 also comes with a chunky 2 Meg of RAM (that's 15 times more than Mega CD) and a double speed drive.

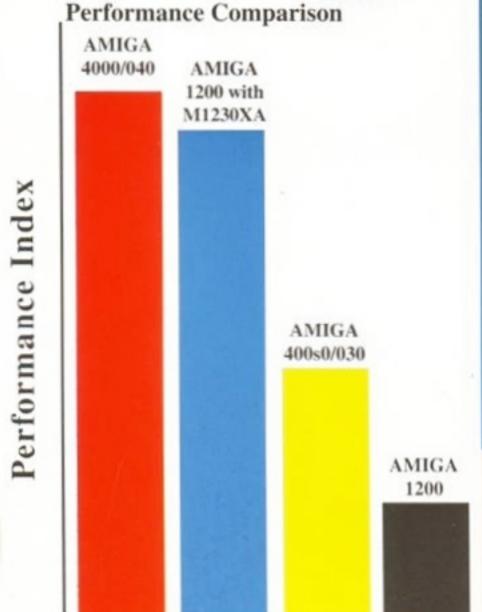
Performance Comparison AMIGA



SPECIFICATIONS:

- * 14 MHZ 68EC020 processor
- * 2 Megs 32 bit chip RAM
- * 2 Joystick ports/controller ports
- * S- video jack
- * Composite video jack
- * RF output Jack
- * Stereo audio jacks
- * Keyboard connector/ auxiliary connector
- * Full expansion bus
- * Headphone jack
- * Headphone volume control
- * External brick power supply
- * Internal MPEG FMV expansion capability
- * Multiple session disc capability

We've said it before and no appologies for repeating it. Adding an Indi Microbotics M1230XA card to your Amiga 1200 turns it into a MEAN MACHINE!



6 MONTHS INTEREST FREE CREDIT

Buy the superb new Amiga 1200 Desktop Dynamite Pack from Indi and we will send it to you for only 10% deposit with the balance over 6 months Interest Free Subject to status

INDI PRICE PROMISE

If you find an identical product advertised in this magazine at at a lower price than the advertised Indi Price and available for immediate delivery then we will match that price". Our way of ensuring that Indi customers have the guarantee of the very best service and the lowest price in town.

'Applies to current products offered under identical terms and conditions and subject to availability

Christmas is a very expensive time of year so here's an offer that really helps you buy in time for Christmas and spreads the cost over

next year. Choose any Indi product (or mix of products) valued at over £200, pay 10%deposit and start paying again in 3 months time. Here's how it works, choose your products and telephone Indi on 0543 419999 and ask for Credit Sales. We will ask you a few questions, explain to you what you will pay and when and then complete our credit check. Within 24 hours we will be able to clear your order and subject to status deliver your products to you.

To save time it is important that when you call us you have your Bank details handy and that you satisfy the three main questions:

1) Are you over 18 years. 2) Have you lived in the UK for the past 3

Are you in full time employment. If you cannot answer yes to all of these questions perhaps the credit agreement would be

in someone elses name if so then they should telephone us. Once you are accepted we will ask for a 10% deposit. If you pay by credit card we will be able to release the products straight away. If you send us a cheque, it will take a few extra days. The only other decision that you will have to make is do you wish to spread the payments over 6, 12, 18, 24, or 36 months? The choice is yours!

DON'T SEND ANY MONEY

Until you are 100% certain that any advertiser has the product that you want in stock and will deliver it to you immediately.

Far too often Jakki Brambles receives letters from customers who are finding it difficult to obtain a refund from an advertiser that has promised to supply but hasn't.

To give you the confidence to purchase INDI has joined the DMA a very important Independent Authority that demands the highest possible standards from its members. DMA members agree to abide by the British Code of Advertising Practice and to subscribe to the Advertising Standards Board of finance (ASBOF) Look out for the DMA Symbol it is your guarantee signifying to the customer the truly professional edge of the industry.

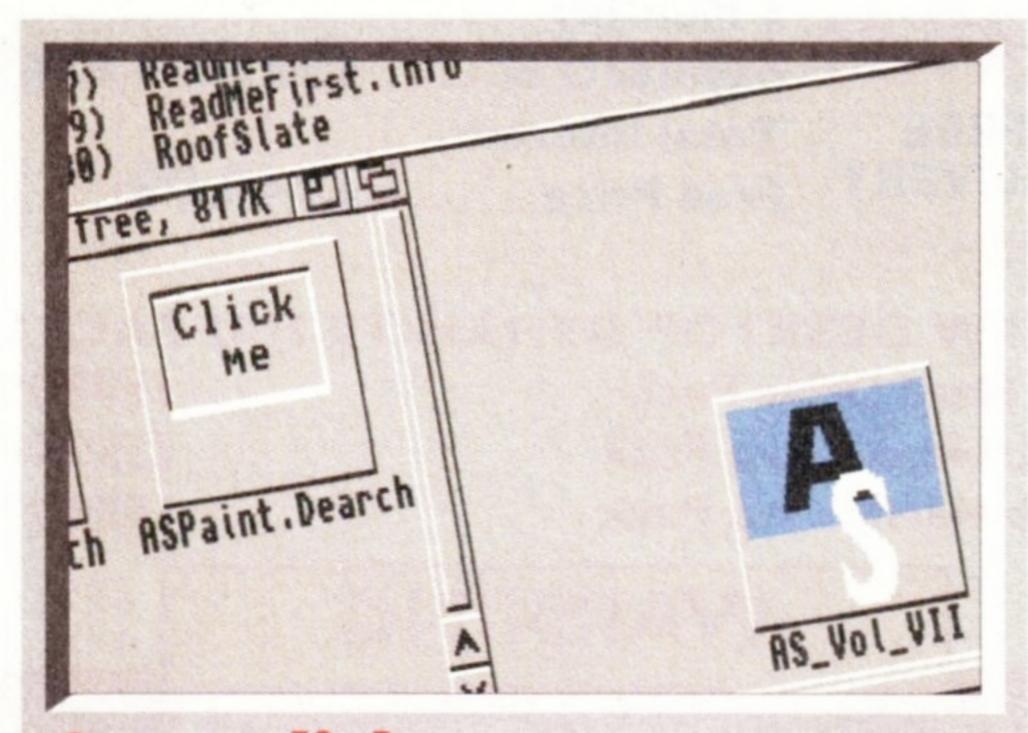


The DMA Symbol.



News

Commodore take Acorn to court over "educational" video; new products announced at Future Entertainment Show; Commodore International announce staggering financial losses



Cover disk

A complete list of the cover disk's contents PLUS important information on how to make a back-up before retrieving and making the best use of all that lovely public domain and shareware



37

9

Turn here if you're experiencing problems with your Amiga. Whether you're a beginner or a pro, our panel, drawn from a wide variety of expertise, will have your hassles sorted in no time

C Programming

Take your address book program one step closer to completion with the latest installment in our programming tutorial. Source code provided on disk

User Groups

Get in touch with Amiga enthusiasts in your area

Subscriptions

Imagine the luxury of getting the next 12 issues of Amiga Shopper delivered to your door, complete with a free binder. Save £5 with direct debit too!

AMOS

101

98

This month, yet more powerful functions are added to Jason Holborn's paint package - compatible with all versions of AMOS. Source code on disk

Letters

104

It's your chance to have your say. This month: Windows NT, creating an index, PD review gripes, and Bible studies. Keep those missives coming

Back issues

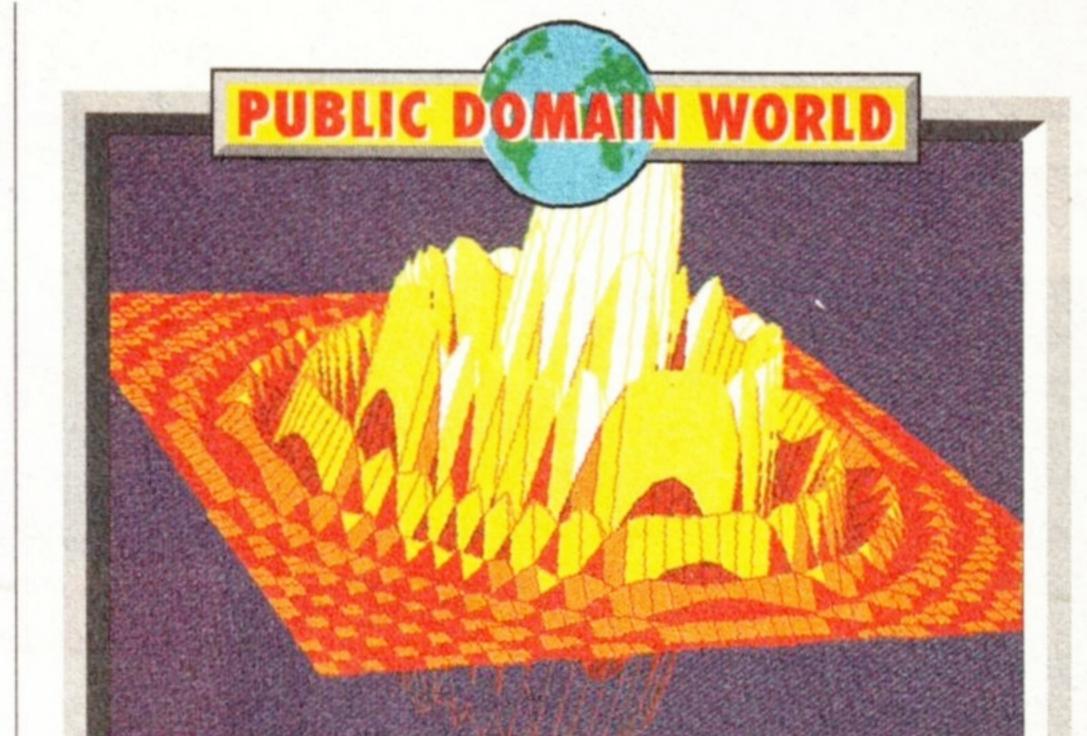
106

Missing the complete set of Amiga Shopper? Turn here to order any issues you may have missed

AmigaDOS

109

Our beginner's guide to the Amiga's operating system this month deals with re-direction, AmigaDOS's flexible input/output convention



Public Domain World

plotters PLUS a look at disk magazines

More reviews! Plenty of useful applications under

the spotlight this month, including an editor, an

automated compresser and a number of graph

125

Your guide to buying public domain software

Safe shopping

Product Locator

128

Take our advice before buying that bargain

Next Month

129

A sneak look into the editor's crystal ball (ooh er)

Your chance to win one of ten copies of SoftWood's Final Writer. Just answer the questions. Easy!

Video Toaster	14
Prime Image	14
FrameStore	17
G2 Image Engine	20
Vidi Amiga-12 AGA	22
Image FX 1.50	26
Picasso II	27
Caligari 24	28
Single Frame Controller	29
Commodore 1942 Monitor	32
Nexus Pro Backgrounds	32
Microvitec Monitor	33
RPaint	33
Wordworth 2 AGA	36
Cygnus Professional 3.5	36
Blitz Basic 2	55

Reviewed in this special issue ALC A BOO BOO PE BO PE DINA

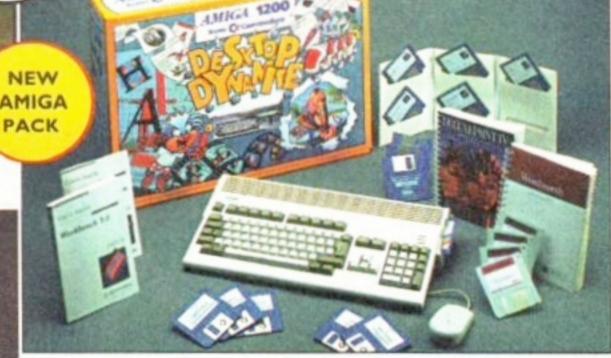
NCommana Pro	01
GigaMem 3	61
Resource	62
Macro 68	62
ACC Hardware Manual	64
CSA 12-Gauge accelerator	64
Cando 2.51 AGA	67
The Music Librarian	69
The Magic of Music and MIDI	69
One-Stop Music Shop	70
Studio	72
True Print/24	72
MultiFaceCard 3	77
Megamouse	77
Joystick/mouse switcher	77
Reference hard drive	72

1		
	Alfa Power hard drive	78
	KCS dual high-density drive	79
	Canon BJ230 printer	80
	Epson EPL-5000 printer	80
	Star LC24-30 printer	81
	Epson LQ-100 printer	81
	Fujitsu DL1150 printer	82
	Award Construction Kit	82
	XCAD 2000	85
	XCAD 3000	85
	PC Task	86
	Accutrans 3D	87
	ASIM CD Filing System	88
	X-Copy Professional	94
	X-Stitch Designer	95
	Turbotech A41200	95



*PAY 10% NOW AND NOTHING MORE FOR 3 MONTHS *ORDERS OVER £200 SUBJECT TO STATUS

AMIGA A1200



CUSTOMER CHARTER

INDI Direct Mail is original and very exciting. Before you buy mail order you must first be confident that you will receive the product you've ordered and that the supplier still be there in the future, should you need them.

A mail order purchase from INDI is a safe and secure decision, and here's why.

INDI is a wholly owned subsidiary of a public company now in it's tenth year of trading and specialising in the supply of computer products.

With a turnover approaching £30 million per annum, we have the resources and the purchasing power to offer you the best deals, deliver them next day nationwide and always be around when you need us. The INDI sales team have been trained to

SALES AND SUPPORT

take your order with the utmost care and efficiency. All stock offered for sale is held in stock, centrally at our group ware house complex and is available for next day delivery, direct to your home or business. If at any time we are out of stock your money will not be banked until the product is available (a point worth checking should you be tempted to purchase elsewhere)

General information regarding product is available from our sales team, however technical support is always on hand should you

All prices quoted are inclusive of VAT.

INDI TELESALES TEL 0543 419999 FAX 0543 418079 9am - 7pm Monday to Friday 9.30am - 4.30pm Saturday.

CREDIT FACILITIES

INDI are now able to offer competitive credit facilities on all orders over £200. All credit facilities are subject to status and applicants must be over the age of 18.

If you would like a quote simply call our our sales line where acceptance can normally be notified within the hour. We are also able to offer Credit Insurance to cover repayments in the event of sickness or unemployment.

AMOUNT*	12 MO	NTHS	24 MC	NTHS	36 M	ONTHS
OF CREDIT	MONTHLY PYMINT'S		MONTHLY PYMNTS			
200	£22.00	£264.00	£12.00	€298.32	69.31	£335.63
500	£54.99	6659.88	£31.06	£745.44	€23.27	6837.72
1000	£109.98	41319.76	662.13	£1491.12	646.54	£1675.44

APR 29.9% WRITTEN QUOTATIONS AVAILABLE ON REQUEST *After deposit paid

AFTER SALES AND SPECIALIST SERVICE

All products are guaranteed for 12 months. Some products carry a 12 months at home service and repair guarantee (where indicated). In the unlikely event that any product purchased from INDI arrives at your home faulty, we will collect from your home and replace the product completely free of charge.

As part of our policy of continual product development and refinement, we reserve the right to change specifications of products advertised. Please confirm current specifications at the time of ordering.

Prices are valid for month of publication only.

AMIGA 1200/030 PROFFESIONAL PACK

(Exclusive to Indi) "Approx 1.5 times faster than an A4000/030

This is the ultimate power configuration, if your dream is to own the quickest A1200 ever then take a look at this specification:

* Amiga 1200 * 4Mb 32 - bit Fast RAM (Expandible to an Amazing 128 Mb!!) * Microbotics M1230 XA W/50MHZ MMU (Approx 1.5 times faster than an A4000/030!!) * 12 Months "At Home Warranty" * Choice of Hard Drive Capacities * Optional 50MHZ 68882 FPU Maths Processor.

80 Mb Version £864.91 120 Mb Version £899.99 170 Mb Version £929.99 68882 50MHZ FPU £132.54

NEW DESKTOP DYNAMITE PACK

A1200 STANDARD FEATURES.

* 68020 Processor * PCMCIA Slot. * 2MB Chip RAM. * 3.5" Internal Drive

INDI 300003

* AA Chipset. * Built in TV modulator. * Alpha numeric keypad. * 12 Months at home maintenance.

FREE

* Wordworth AGA* Print Manager * Deluxe Paint IV AGA * Oscar AGA

Dennis The Menace AGA

6 MONTHS INTEREST FREE CREDIT * £34.99 Deposit

6 Monthly payments of..... £52.50 = £315.00

FREE Total Interest

DELIVERY Free Price.....£349.99 Subject to Status

NEW DESKTOP DYNAMITE H.D PACKS

80 Mb Hard Drive Pack £509.99 120 Mb Hard Drive Pack £559.99 170 Mb Hard Drive Pack £589.99

WARNING

Some advertisers are fitting 3.5" drives to Amiga 1200. The Amiga was never designed to accept 3.5" drives and fitting one totally invalidates any Commodore Warrenty. Indi only offer official 2.5" IDE drives officially accepted by Wang, ICL and Commodore.

ate response.

AMIGA A4000



feature built - in stereo speakers. INDI 301011

NEW MONITOR RANGE

been specially designed for the New Amiga 1200 and 4000 computers. Both monitors

1942 Monitor £349.99 It's here - The new Amiga 4000/030 14 inch screen size - 0.28 mm dot matrix

The NEW Amiga 4000/030 features a EC68030 processor running at an incredible 25Mhz, and upgradable at a later date to a faster processor. The 4000/030 has a powerful 2 Mb of 32 - bit RAM expandable to 18 Mb using industry standard 32 - bit Simms module. In line with the Amiga Flagship 4000/040 the 4000/030 features the new AGA graphics chipset, giving you a massive pallet of 16.8 million colours. A range of hard drive options are available from 80 - 240 Mb and includes a SCSI option.

Without a doubt this is the best value A4000/030 configuration in the UK

4000/030 170 Mb HD INDI PRICE

A full range of approved upgrades are available for the 4000/030, including additional memory modules, hard drives, FPU's (68881 &68882)and the 24 - bit Opal Vision graphics and video system

Parnet Adaptor for CDTV Connect a CDTV player to any Amiga, and access the world of CD - ROM software. The Parnet interface and software will allow the Amiga CDTV to be used as a CD - ROM drive withe any Amiga and will give any Amiga owner access to the vast range of CDTV soft-

The CDTV player offers excellent value for money when compared with a standard CD -ROM drive and interface. Most CD - ROM drives will set you back over £400 while CDTV will cost you less than £300 and will play audio CD's in addition to CD - ROM / CDTV disks your Amiga, interface cable and PD disk with driver software for your CDTV player. (The Parnet adapter can be

VAT free export invoices.

THE NEW DUAL SYNC1942 Monitors have Did you know that Indi regularly

ware currently available.

used to link any Amigas together)

Includes free insurance.

Traceable airway bill reference details.

EXPORT ENQUIRIES

Fax or Telephone us for an immedi-

Delivery anywhere in the World

Very competitive delivery rates.

in an average 5 days door to door

deliver throughout the world?

Immediate price quote

Local telephone contact in your country.

> **EXPORT NUMBERS** TEL: (44) 543 419999 FAX: (44) 543 418079

AMIGA A600 PRICE CRASH

309003



THE WILD THE WEIRD AND THE WICKED A600 is an ideal starter pack containing a considered mix of software, making the most of **LOW LOW** the Amigas capabilities. PRICES

PACK CONTAINS:

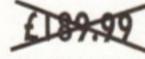
- * A600 Single Drive Built in TV Modulator
- * I Mb Memory
- Pushover: Grandprix
- Silly Putty: Deluxe Paint III Mouse and Manuals

NDI 300006

A600 - SD A single drive Amiga for those of you requiring a basic A600 at a very competitive price.

PACK INCLUDES: A600 single drive, built in TV modulator, I Mb memory. 12 Months at home service

300007



£169.99

A600 EPIC PACK (40 Mb HD) PACK INCLUDES:

A600 Hard Disks (40Mb) * I Mb Memory * Epic * Rome * Myth * Trivial Pursuit * Amiga Text * Deluxe Paint III * 12 Months at home service.

300008



INDI A600 ACCESSORY PACK

* Microswitched Joystick * Lockable Disk Box * Disk Wallet * 10 Blank Disks * Kick Off 2 * Pipemania * Space Ace * Populous * Zapsac A600 Carry Case * Zappo T - Shirt.

309000

£26.99

CREDIT AVAILABLE ON 6,12, 18, 24, 36 MONTHS.

WHY NOT RING NOW FOR A QUOTE. SAME DAY RESPONSE.

AMIGA PERIPHERALS & ACCESSORIES

NEW FROM MICROBOTICS!!!. M1230XA ACCELERATOR LAUNCH!!

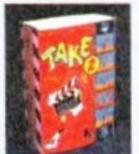
Microbotics beats the competition in price/ performance/ features and configurations. INDI is very pleased to announce the availability of the new 68030 accelerator product for the A1200: the microbotics M1230 XA (call it the "XA" for short). 50 Mhz as standard! Huge 128 MB memory design is standard (the biggest memory space in any A1200 peripheral) just look at these specifications and prices!

M1230 XA W/40 MHZ EC 030 OMB INDI PRICE £239.99 M1230 XA W/40 MHZ EC 030 4MB INDI PRICE £369.99 M1230 XA W/40 MHZ EC 030 8MB INDI PRICE £599.99 M1230 XA W/50 MHZ MMU 030 0MB INDI PRICE £319.99 M1230 XA W/50 MHZ MMU 030 4MB INDI PRICE £479.99 M1230 XA W/50 MHZ MMU 030 8MB INDI PRICE £711.99

AUDIO VISUAL

MEGAMIX. Low cost, hi spec digital effects cartridge plugs into the printer port of the Amiga. Allows stereo sampling from almost any musical source.

INDI PRICE £29.99 INDI 350000



TAKE 2. Animation package is a must foe computer artists and enthusiasts of all ages. As used in Rolf Harris Cartoon Club.

INDI PRICE £37.99 INDI 350001



VIDI AMIGA 12. The ultimate low cost colour digitiser for the Amiga. "The best value full colour digitiser on the market" AMIGA FORMAT.

INDI PRICE £74.99 INDI 350002

ROMBO VIDI AMIGA 24(RT). For the more serious user, this 24 - bit version will again capture from from any video source with true photo realistic images! A staggering 16.7 million colours can be utilised with incredible results. Full AGA chipset support.

OPAL VISION

NEW FOR DECEMBER RELEASE!

The already acclaimed Opalvision Board takes three

further leaps into the future with the official launch

of the Opalvision modules. With truly awesome

capabilities the Amiga can now become the most

professional 24 - bit video graphics power station

INDI PRICE £219.99

AMIGA PERIPHERALS



2MB SMARTCARD. The original and still the only fully PCMCIA compatible memory card for A600/ A1200.Comes with lifetime guarantee. Beware of cheap imitations.

INDI PRICE £109.99 4MB SMARTCARD, Same as above but maximum 4MB INDI PRICE £159.99

ZAPPO 601

ever!

Trapdoor upgrade for the A600, 1Mb with RTC INDI PRICE £49.99 ZAPPO 601 INC As above only 512K,

no clock INDI PRICE £29.99



INDI 350004

The NEW OPAL VISION system(Rev.2)

updated and is now even better value for money.

The software suite now includes:

Opal Paint V2.0 Now includes full magic wand implementation and Alpha Channel that allows photo compositing with selectable levels on a pixel by pixel basis. The new Chrominance effect allows absolute, real time control of image contrast, brilliance and re - mapping of colours.

ed by ray tracers, landscape generators, morphers and all other 24 - Bit

Opal Hotkey V2.0 - Display OpalVision graphics anytime with key combinations.

"Quite simply, it's a spectacular product - Amiga Computing "Undoubtedly the finest, most professional paint program to arrive on the Amiga" - Amiga Format

"The verdict was unanimous - brilliant"

- Amiga Shopper

MBX1200.

The original and best floating point unit and memory upgrade for the Amiga A1200. Available with 0,4 or 8 MB of 32 bit Fast RAM and a choice of floating point units. Now complete with real time clock (RTC)

MBX1200Z 68881 14 MHZ 0MB INDI PRICE £109.99 MBX1200Z 68881 14 MHZ 4MB INDI PRICE £249.99 MBX1200Z 68881 14 MHZ 8MB INDI PRICE £449.99 MBX1200Z 68882 25 MHZ 0MB INDI PRICE £169.99 MBX1200Z 68882 25 MHZ 4MB INDI PRICE £309.99 MBX1200Z 68882 25 MHZ 8MB INDI PRICE £519.99 MBX1200Z 68882 50 MHZ 0 MB INDI PRICE £289.99 MBX1200Z 68882 50 MHZ 4MB INDI PRICE £439.99 MBX1200Z 68882 50 MHZ 8MB INDI PRICE £599.99 68882 FPU UPGRADE 50 MHZ INDI PRICE £169.99

ROCTEC ROCGEN PLUS.

As above but with extra features such as tinting and signal inversion. Allows for real time editing of graphics. Compatible with all

INDI 350050

INDI PRICE £129.99

ROCTEC ROCKEY.

The ultimate accessory for Amiga / Video fans. Separate RGB controls to chroma key on any colour.

INDI PRICE£249.99

INDI 350051

ROMBO VIDI AMIGA 12 (RT). Based on the best selling Vidi Amiga 12. This all new version offers real time colour capture from any video source. Full AGA chipset support as standard for all A1200 / 4000 users.

INDI PRICE £129.99

INDI 350003

DISK DRIVES ZAPPO EXTERNAL FLOPPY



You've seen all the reviews on this popular and affordable second Amiga drive. Compatible with all Amigas.

INDI 350152 INDI PRICE £49.99

Quality: 9 out of 10. Exceptional value for money. AMIGA COMPUTING JAN 93

1084S MONITOR.

Commodores original and best selling colour stereo monitor. DOES NOT INCLUDE STAND.

INDI 350014

£189.99

(£179.99 if purchased with A600 / A1200 / A1500)

The amazing Opalvision 24 - bit graphics board and software suite has been

Opal AnimMATE V2.0 - ofering real time play back of animations creat-

"Professonal quality at this Price can't be turned away" - Amiga User

International

INDI 350250



MORPH PLUS

You've seen Micheal Jackson's video, you've seen the television adverts using the latest techniques in morphing, now now you can create the same results but at a fraction of the cost. Morph Plus is the latest and the ultimate in this technology. Whether you are a professional artist or just want to experiment at home Morph Plus is a must.

INDI PRICE £109.99

INDI 350200



DELUXE PAINT IV AGA

Combines powerful tools with an intuitive interface so both professionals and beginners alike can get superb results quickly. New enhancements to the software include the ability to paint and animate in 4696 colours in the Amiga's HAM (Hold and Modify)mode. New animation features also include metamorphosis allowing you to change one image into another. You determine the number of frames and DPaint IV does the rest.

INDI PRICE £61.99

INDI 350201

ART DEPARTMENT PROFESSIONAL

The ultimate in image processing providing many key benefits to Amiga users working with pictures. With ADPro you can read, write and convert between most common image file formats with unmatched flexibility. Full support for JPEG image makes it possible to maintain an image library in full 24 - bit colour without needing massive hard drive storage. Typically a 600 Kb image can be compressed down to 40 Kb!!

INDI PRICE £132.99

INDI 350202

REAL 3D V2

Is a full featured 3D animation, modelling amd rendering program. With Real 3D V2 you can produce high quality images and animations of three dimensional models with an astonding level of realism. Imagine creating an animation that shows a handfull of balls bounce down a flight of stairs to the bottom. Gravity, colliision, deflection and the elasticity of the balls are all automatically calculated by the program!



INDI PRICE£299.99

INDI 350203

SCALA Multimedia 200 (MM200) Is the ultimate on professional video titling. The eminent design of typefaces, the unlimited choice of typographical details, the high resolu-

tion and the more than 80 exciting wipes result in video captioning of exquisite quality. No wonder that Scala is used by leading television stations around the world. INDI 350204

> INDI PRICE £139.99 also available SCALA HOME TITLER

INDI 350205 INDI PRICE £84.99

VIDEO DIRECTOR With Video Director, anyone with an Amiga, a camcorder and a VCR can quickly and easily catalogue and edit the best moments from their

video tapes. Video Director is extremely easy to use, you can actually control your camcorder and VCR from your Amiga screen . Video Director comes with everything you need to get started. The hardware to control your camcorder and VCR is included

INDI PRICE £119.99

INDI 350206

*Camcorder must have a LANC or Control L compatible port Professional software is imported and sometimes subject to

delay. Confirm delivery at time of order.

TEL: 0543 419 999

WHY NOT RING FOR A QUOTE. SAMEDAY RESPONSE. (SEE EXAMPLE)





We researched the colour printer market at great depth to find a colour printer good enough to cope with Amiga's powerful output, yet at an affordable price. We found the perfect printer in the KX - P2180 and KX - P2123 quiet printers.

We then considered that if you were going to buy a Panasonic printer you would probably need a quality word processing package to use with it. We found that too, with 'Wordworth' yet at a retail price of £129.99 we thought that might be a little too expensive on top of your printer purchase! So together with Panasonic we decided to give a copy of 'Wordworth' free with every Panasonic printer. How's that for added value?

Panasonic

KX - P2180

Panasonic

KX - P2123



WORDWORTH AGA COMPLETELY FREE!

WITH PANASONIC QUIET PRINTERS. The writers choice. The ultimate word processor for AMIGA computers. Wordworth is undoubtedly the ultimate word / document processor for the full range of AMIGA computers. The graphical nature of WORDWORTH makes producing documents faster and easier, with the enhanced printing fonts (including full Panasonic KX - P2180 and KX - P2123 colour printing support). Collins spell checker and thesaurus, no other word processor comes close. "Without doubt this is one of the best document processors for the AMIGA, Today" (Amiga Format)

NORMAL RRP £129.99 inc. VAT

INDI 320000

£169.99

INDI 320001

£219.99



The new high performance Panasonic KX - P2123 24 pin. Quiet colour printer offers leading edge quiet printing technology at an affordable price

Produces crisp clear text in mono or in 7 glorious colours with new quiet technology. THe new KX - P2180 is typically 15dBa

The new Panasonic KX - P2180 9 -pin quiet printer.

quieter in operation, than the competition. * Fast Printing Speeds 192 CPS NLQ

- * Colour Printing 7 colour palette (blue, red, green, yellow, violet, magenta,black) * Quiet printing Super quiet 45 - 48 dBa sound level (most matrix printers are typi
- cally in excess of 60 dBa)
- * 6 Resident Fonts Over 6,100 type styles using Courier Prestige, Bold PS, Roman, Script and Sans Serif Fonts.
- * 3 Paper Paths Paper handling from bottom, top and rear for total flexibility
- * I Year Warranty for total peace of mind

* Fast Printing Speeds 192 CPS draft, 64 CPS LQ and 32 SLQ.

- * Colour Printing 7 colour palette (blue, red, green, yellow, violet, magenta, black)
- * Quiet Printing Super quiet 43.5 46 dBa sound level (most matrix printers are typically in excess of 60 dBa)
- * 7 Resident Fonts Over | 52,000 type styles using Super LQ, Courier Prestige, Bold PS, Roman, Script, and Sans Serif Fonts.
- * 24PIN Diamond Printhead High performance and high quality output
- * I Year Warranty for total peace of mind.

Panasonic LASER PRINTER

KX - P4410 LASER PRINTER



WORDWORTH AGA COMPLETELY FREEWITH PANASONIC LASER PRINTERS. The writers choice. The ultimate word processor for AMIGA computers NORMAL RRP £129.99 inc VAT

KX - P4430 LASER PRINTER



Once again INDI have joined together with Panasonic to offer all Amiga owners the most outstanding Laser Printer offer ever. We are now able to offer high quality, professional laser printing at affordable prices. We are also giving away a copy of Wordworth with every Panasonic Laser Printer purchased (RRP £129.99). Whether you are looking for a laser printer to handle word processing. DTP, presentation or complex graphic applications - the Panasonic range offers you the power to meet your requirements.

KXP - 4410

- * 5 pages per minute
- * 28 resident fonts
- * Optional 2nd input bin(total printer capacity 2 x 200 sheets)
- * Low running costs
- * Parallel interface
- Optional memory expansion to 4.5 Mb (0.5 as standard)
- * HP laserjet II Emulation

INDI 320002



£499.99

inc. VAT

WORDWORTH AGA COMPLETELY FREE WITH LASER PRINTERS



KXP - 4430

- Satinprint (optimum) resolution technology)*
- 5 Pages per minute
- * HP Laserjet III Emulation, PCL 5
- * 8 Scalable fonts & 28 bitmap functions
- Optional 2nd input bin (total print er capacity 2 x 200 sheets Optional memory expansion to
- 5.0 Mb (1 Mb as standard)

NDI 320003

LOW PRICES!

*(Satinprinters use optimum resolution technology to produce truly outstanding print quality. This software technique smooths away traditional jagged edges on curved characters and lines by varying the printed dot size

WORDWORTHAGA COMPLETELY FREE WITHLASER PRINTERS

Panasonic PRINTER ACCESSORIES



1) PANASONIC AUTOMATIC SHEET FEEDER Automatic sheet feeder for KXP 2180/ KXP 2123 holds 80 A4 sheets. INDI PRICE £89.99

2) PRINT DUST COVER

Specially tailored quality dust cover for Panasonic KXP 2180/ KXP 2 23 printer. INDI PRICE £8.99

3) PRINTER STAND 2 piece printer stand. INDI PRICE £9.99

4) PAPER PACK 500 sheets quality A4 paper. INDI PRICE £9.99

5) CONTINUOUS PAPER 2000 sheets | part listing paper. INDI PRICE £19.99

6) PARALLEL PRINTER CABLE To be used when connecting Amiga to Panasonic printers. INDI PRICE £8.99 (£5.99 if purchased with a printer)

7) PANASONIC COLOUR RIBBON Colour ribbon for KXP 2180/ KXP 2123. INDI PRICE£18.99

8) PANASONIC BLACK RIBBON Black ribbon for KXP2180/ KXP2123, INDI PRICE £9.99

SAVE **EEEES** ON THE FOLLOWING ACCESSORY PACKS

PACK I

PANASONIC COLOUR RIBBON PACK Contains 6 colour ribbons for the KXP 2123 RRP £119.99.

INDI PRICE £89.99 SAVE £30!!!

PACK 2 PANASONIC RIBBON PACK

Contains 2 black and 4 colour ribbons for KXP 2180/ KXP 2123.RRP £99.99. INDI PRICE£69.99 SAVE £30!!!

PACK 3

PANASONIC DELUXE ACCESSORY PACK

Contains automatic sheet feeder, 2 black ribbons, 2 colour ribbons, I dust cover, 2 piece printer stand. RRP £169.99 INDI PRICE £139.99 SAVE £30

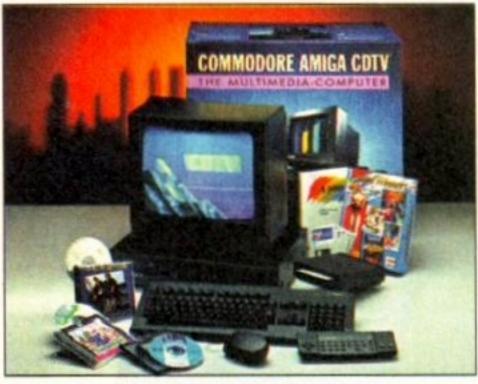
Add £2.50 carriage to all printer accessories or combinations thereof

LOW INTEREST CREDIT ON ALL ORDERS OVER £200 (PLEASE CALL FOR A QUOTATION, SUBJECT TO STATUS)

AMIGA CDTV

THE MULTIMEDIA COMPUTER TOTAL HOME **ENTERTAINMENT SYSTEM**

PRICE CRASH!!!



BLACK 1084S MONITOR

At last the CD 32 Monitor you have been waiting for. The original and best selling colour/ stereo monitor from Commodore is now available in black to complement your CD 32.

INDI 300010

£179.99

PACK CONTENTS AS STANDARD

- * Amiga CDTV Player
- * CDTV Keyboard
- * CDTV 1411 3.5" Disk Drive
- * CDTV Infra Red Remote Controller
- CDTV Wired mouse
- * CDTV Welcome Disk
- * Manuals
- * Fred Fish CDTV Disk

INDI 30 0011

PACK AS SHOWN £229.99

AMIGA CDTV EXTERNAL HARD DISK DRIVE

You've got the CDTV, you've got the key-board and the floppy disk drive - for a total computer solution all that's needed is an ultra fast hard disk drive.

The CDTV - HD unit boasts a massive 60 Mb of hard disk storage with lightning fast access times through its SCSI interface. The unit comes complete with Workbench 1.3 and all necessary cables.

INDI 350300

If you are thinking of buying CDTV or already own one you'll be pleased to know that INDI stock all CDTV accessories and software that are available from manufactures. We believe in CDTV and we therefore continue to support this exciting product. You will always have a source of product for your CDTV from INDI.

L to R

CDTV Encore SCSI Controller + Internal Mount	£59.99
CDTV Internal Genlock	£ 99.99
Black 1084S Colour Stereo Monitor	£189.99
(When purchased with CDTV Multi - Media Pack)	£179.99
CDTV Remote Mouse	£39.99
Scart TV / Monitor Lead	£14.99
(inc Stereo Phono Lead)	
CDTV Trackball	660 00

AMIGA CDTV SOFTWARE New Amiga CD 32 AGA Titles Now in Stock!

ARTS AND LEISURE		Mind Run	£29.99	Classic Board Games	£34.99	NEW AMIGA CD32 TITL	ES
Advanced Military Systems £2	29.99	Mud Puddle	£34.99	Sim City	£29.99	James Pond AGA	£26.50
	29.99	My Paint	€29.99	Trivial Pursuit (PAL)	£49.99	D Generation AGA	€26.50
	34.99	Paper Bag Princess	634.99	Wrath of the Demon	£29.99	Pinball Fantasies AGA	€28.50
	29.99	Scary Poems for Rotten Kids	£39.99	Raffles	£34.99	Whales Voyage AGA	€26.50
	34.99	Tale of Benjamin Bunny	£39.99	Prehistorik	(34.99	Trolls AGA	£28.50
	34.99	Tale of Peter Rabbit	£39.99	Snoopy	£34.99	Jurrasic Park AGA	£28.50
	34.99			European Space Simulator Global Chaos	629.99	Alfred Chicken AGA	£22.50
Indoor Plants	.34.77	Thomas 's Snowsuit	£34.99	Turrican II	£29.99	T-F-X AGA	231.50
EDUCATION		Moving Gives me Stomach Ache	£34.99	Guy Spy	£29.99	Sleepwalker AGA	€28.50
EDUCATION		Barney Bear Goes Camping	£29.99	Curse of Ra	£24.99	Morph AGA	€28.50
	24.99	Asterix French for English 1	£34.99	Space Wars	€29.99	REFERENCE	****
A long Hard Day at the Ranch £	(34.99	Japan World (PAL)	£49.99	Defender of the Crown	€29.99	American Heritage Dictionary	£49.99
A Bun for Barney	29.99	Fractal Universe	£34.99	Tiebrake Tennis	£19.99	Complete Works of Shakespeare	£29.99
Cinderella £	39.99	Read with Asterix	£19.99	MUSIC		Illustrated Holy Bible New Basic Electronic Cookbook	£29.99
Fun School for 5 to 7	24.99	ENTERTAINMENT		Music Maker	£34.99	Timetable of Business	439.99
Fun School for Over 7's	24.99	Battlechess	£39.99	Remix	£29.99	Dr Wellman	£54.99
Heather Hits her First Home Run &	(34.99	All Dogs Go To Heaven: Electric Crayon	£34.99	Voicemaster + Microphone Music Colour	£39.99	Software titles in green are co	
				Financ Colour	237.77	with the new Amiga CD	

AMIGA ACCESSORIES



Sharp Monitor / TV The Superb Sharp 14" Monitor / TV provides a

real alternative to a Commodore Monitor with full function remote control 39 channel electronic auto search tuning, digital on screen display and 1.5 watt mpo audio output, all you need to know is the Low, Low Indi Price.

So, unless you need High resolution graphics look no further, the Sharp Monitor / TV is the product for you complete with connectivity cable and including 12 Months Warranty

NEW LOW PRICE IDE INTERNAL HARD DRIVES

Indi can now offer top quality 2.5" Internal Hard Drives for the Amiga 600 and 1200 at unbeatable prices. All drives come complete with a cable and installation software.

80Mb 2.5" Internal Hard Drive £179.99 2.5" Internal Hard Drive 120Mb £200.99 170Mb 2.5" Internal Hard Drive £239.99



A2091 CONTROLLER CARD

The 2091A is an autobooting SCSI controller card with the facility to mount the SCSI Hard Drive directly onto the controller card. The 2091A also has the facility to take upto 2Mb RAM (1/2 Mb steps). The A2091A controller is zorro II compatible and is therefore suitable for the Amiga 2000 although it does offer an ideal solution for the Amiga 4000/030, where leading edge performance is not require. The A209 IA is still the most reliable Amiga SCSI card available and with the supplied software is the easiest way to install.

INDI PRICE £79.99

Commodore MPS 1230 Printer

A high quality 9 - pin printerwith paper and tractor feed and is fully compatible with Epsom FX80 and IBM Industry standards. High speed 120 CPS draft mode and an NLQ mode of 24 CPS.

Indi Added Value Free

D - Print - Design greetings cards, letters and posters. Amiga Logo - Educational and programming language.

INDI 300015

A2630-2Mb ACCELERATOR BOARD

The 1630 is a 68030 accelerator board running at 25Mhz complete with a 68882 FPU and 2Mb of 32 - Bit fast RAM suitable for the A2000. THe 2630 board brings the performance of the Amiga 2000 upto nearly that of the A3000, ideal when running professional applications. An additional 2Mb of 32 - Bit fast RAM can be added to the 2630 board, giving a total of 4 Mb of fast RAM.

INDI PRICE £369.99

A2300 GENLOCK

A cost effective home quality entry level internal genlock, suitable for the Amiga 2000/3000. The 2300 genlock is an ideal solution for anyone wishing to put titles or graphics onto home video. INDI PRICE £39.99

TEL: 0543 419 999 FAX: 0543 418 079

The A2286 AT EMULATOR
The A2286 AT emulator kit offers IBM AT compatibility on the Amiga 2000 and 3000 systems, running at 10Mhz with 1Mb RAM and CGA graphics. The A2286 emulator also includes a 5.25"1.2Mb floppy drive and MS DOS operating software.

INDI PRICE £159.99

A2088 XT EMULATOR KIT The A2088 XT emulator kit offers IBM compatibilityon the Amiga 2000 and 3000 systems, running at 4. 77Mhz with 512Kb RAM and CGA graphics. The A2088 emulator also includes a 5.25" 360K floppy drive and MS DOS operating software.

INDI PRICE £79.99

An 8 Mb 16 - Bit RAM board, supplied with 2Mb RAM and upgradable in two steps. The 2058 is a zorro II compatible and they are compatible with the

INDI PRICE £99.99



DESPATCH

All orders received by 6pm Monday to Friday are despatched sameday for delivery using our national courier - Securicor. (UK Mainland only). Saturday deliveries are available at a small surcharge. If you are out when we deliver, a card will be left at your home giving you a contact telephone number to arrange a convenient re - deliv-

Delivery queries can be resolved immediately using our on - line computer.

Cheque orders are despatched immediately on cheque clearance, usually 10 working days from receipt. A delivery charge of £5.00 is made per item unless otherwise stated.

WE ALSO ACCEPT B.F.P.O. ORDERS (DUTY FREE) CARRIAGE CHARGE AT UK POSTAL RATES.

HOW TO ORDER

BY POST - Simply fill in the coupon below. BY PHONE - phone lines open 9.00am - 7.00pm Mon - Fri. 9.00am - 4.30pm Sat. - where your call will be answered by one of our INDI sales team. After 7.00pm each day your call will be answered by answerphone. If you would like to place an order have all the details at hand including credit card. All offers subject to availability. Prices correct at time of going to press. May we suggest you call before ordering.

SEND YOUR ORDER TO:

INDI DIRECT MAIL I RINGWAY INDUSTRIA

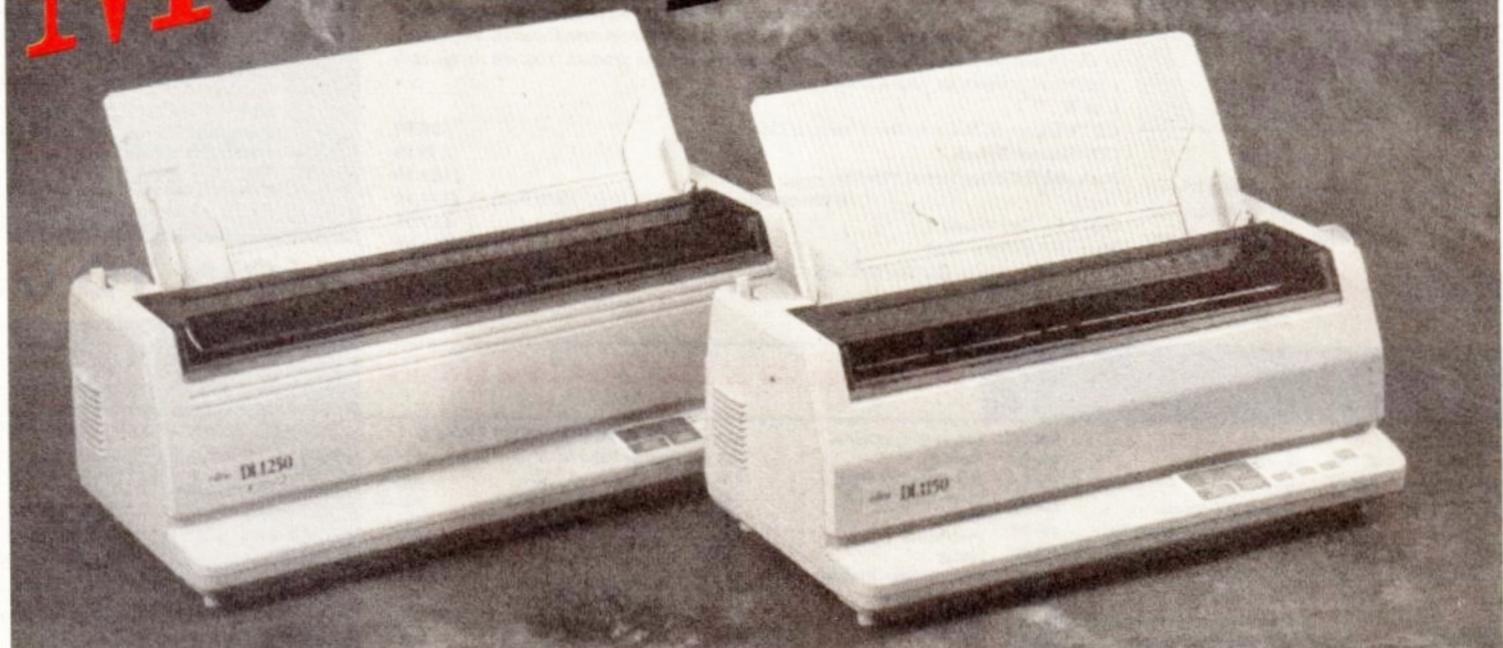
ESTATE, EASTERN AVENUE, LICHFIELD STAFFS. WS13 7SF	ASXM93
2)	
4)	
Price	+ Delivery.
I enclose cheque/ Po or charge my Access/	
ExpiryJ	
Signature	
Name	
Address	
Audress	

Deliver to if different

Daytime Tel.....

Postcode

Two Smart 191eces 1 A Sternie Colour



The DL1150 Colour and DL1250 are two smart masterpieces from Fujitsu – the second largest computer manufacturer in the world. Thanks to a unique design, these printers will save you a lot of valuable desk space.

The DL1150 is the smaller model and prints in colour on a A3/portrait or A4/landscape. If you need larger printouts, the DL1250 is the perfect choice – it prints on A2 format.

The DL1250 is monochrome but can easily be upgraded to a colour printer by use of an optional colour kit.

The 24-pin dot matrix technology offers high resolution. Many

resident fonts provide a multitude of printout options. You can easily connect your computer with our printers, thanks to Fujitsu's unique DL-menu. Drivers are available, both for Windows and Amiga. For further information please contact your Fujitsu representative, Amiga-Warehouse, Tel. 0753-554338, Fax 0753-551211 or FUJITSU PRINTER PRODUCTS OF EUROPE, Tel 081-573-4444, Fax 081-813-7371 directly.





COMPUTERS, COMMUNICATIONS, MICROELECTRONICS



The editor, Cliff Ramshaw, offers his penny's worth...

So Commodore's restructuring efforts have yet to halt the huge losses the company is currently making. I say "yet to", rather than "failed to", because the magnitude of the losses is decreasing. Perhaps Commodore will be turning in a profit in six months' time.

It's clear that the A1200 and CD32 must succeed if Commodore are to stay afloat. Otherwise it's no more new owners, no more support for existing owners, and a gradually declining base of third-party manufacturers. They're both good machines at good prices, so let's keep our fingers crossed.

At least Commodore's court case shows that they're capable of taking the Amiga as seriously as we do. One worrying thing, though: did they really have to look in a magazine to find a list of productivity software? Imagine the head of Apple saying, "I know there's a word processor available for the Mac, but what on Earth is it called?"

Virus alert

Beware - disk 919 in the Fred Fish collection contains a virus. This disk is also one of the set that appears on Fred Fish's October CD-ROM.

The virus, a particularly dangerous one known as "Saddam Hussein", will only affect machines running either Kickstart 1.2 or 1.3, and can only be activated if the file containing it is run by the user. That file is BBBF/FileVirLib/VirusTo Test/Saddam_Hussein_virus.

Most anti-virus programs, including those supplied with recent issues of Amiga Shopper, will find and remove the virus easily. A safe version of the CD and disk should be available by the time you read this.

COMMENT Commodore defend serious Amiga over alleged Acorn slur

n educational video distributed by Acom Computers has forced Commodore into

demonstrating conclusively that the A1200 is capable of far more than just games.

The big C's move comes after Acorn began distributing their video via adverts in the national press. Entitled The Home Computer Minefield, the video was designed to help noncomputer-literates choose the

best machine for their needs. You can guess which machine came out on top. (Clue: it wasn't the Amiga.)

Commodore took

exception to a sequence in the film where each contender in turn is removed from the running as it is found unsuitable to run either games, home office or educational software. Commodore believe that the video implies the A1200 is suitable for only games, and that the tape therefore gives a misleading impression about the Acorn machines' competitors. They therefore sued Acorn for defamation of goods (trade libel).

Commodore obtained an interlocutory injunction on 1

November, preventing Acorn from distributing the video for seven days. Commodore produced a long list of Amiga productivity software, culled from a current magazine, to demonstrate their case.

When the court was re-convened a week later, Commodore were able to show to the judge a word-

This is an Acorn A3010. Commodore have gone to court to insist that an A1200 can be just as "serious".

processed document, containing text, a headline, scanned picture and signature, very similar to that produced on the Archimedes in the original video. The single-page

document was created by Premier Vision, who managed to produce it in ten minutes to show just how quickly such a thing can be done with the Amiga. At this point, Acorn decided to voluntarily withdraw their video, although they still claim that they intended no slur on their competition. A Commodore spokesman

> commented to us that Acom withdrawing the video yet refusing to admit liability seemed "contradictory".

Acorn are in the process of producing a new video, one that happily avoids drawing any comparisons with competing machines. Meanwhile, they have sent letters to all those who have already received copies of the first video (some 17,000 people), correcting any misleading information they may have given about the Amiga.

Commodore had hoped to be given the names and addresses of these recipients, but have had to put up with information from Acorn's

solicitors telling them how many corrections have been mailed out. The case is continuing, with Commodore still claiming legal costs and damages.

More zap for Blitz Basic

Acid Software, makers of Blitz Basic, have set up an office in the UK. The new office will enable the company to give UK users of the development language much better support than was possible from Acid's home base in New Zealand.

Acid Software Europe will be selling Blitz Basic II thought by many to be a serious rival to AMOS - for £69.95. The company will also be setting up a user club and a bulletin board system, and distributing the Blitz User Magazine (or BUM, for the acronymically-fixated), which has been published elsewhere in the world for two years now.

The magazine comes with a cover disk, and is particularly important for Blitz users because it often contains additions to the language. The latest edition comes with an AGA display library, plus support for ASL and GadTools. The former means that programmers can take advantage of the features of the newer Amigas such as 24-bit palettes and 64-pixel-wide sprites. The ASL and GadTools support means that applications programmers can use Blitz commands to open Amiga-standard file, font and screen mode requesters, as well as create cycle



Blitz Basic's blinding speed and total control over the hardware makes it ideal for games programmers.

gadgets, radio buttons and list selectors.

4066. See also our review of Blitz Başic on page 55.

New products at Future Show

AS WELL AS all that games nonsense that we won't concern ourselves with here, the Future Entertainment Show, which took place at Olympia on November 11 to 14, played host to a number of juicy new products for the discerning Amiga owner.

Most important of these was the Full Motion Video Module for the CD³². The add-on cartridge, demonstrated in prototype form at the show, enables the machine to play back video footage recorded on compact disc. The quality of the images is reckoned to be better than that of VHS videotape. We saw CD32 being used to play back two songs by the Eurythmics - Love Is a Stranger and Sweet Dreams - and a couple of Commodore promotional films, and damned fine they looked, too.

Up to 72 minutes can be fitted on to a single disc, by virtue of a special compression method, known as MPEG, recently agreed by key players in the computer and video industry. The special chips that are needed to decode the video information have



You can achieve high-quality colour prints like this for under £1,000, thanks to Fargo's Primera printer.

only recently been made available, and Commodore are among the first in giving their machine the capability to use them.

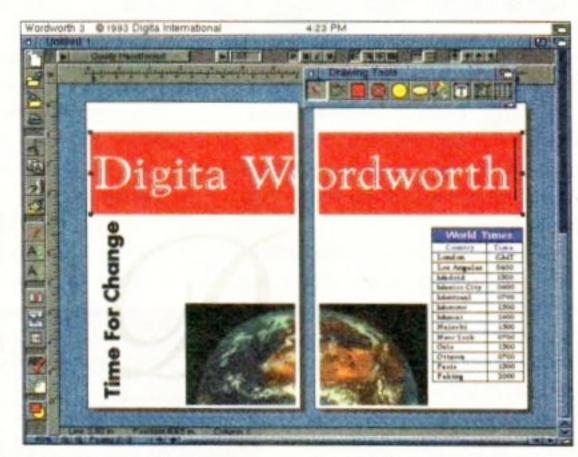
Full Motion Video is expected to create something of a revolution, enabling owners of compatible systems to listen to CDs, watch movies and play music accompanied by video footage, all with the same unit.

Owners of Commodore's CD32 should be able to jump on the bandwagon by the second week of December, when the FMV add-on is expected to go on sale for £199.99. It can only be a matter of time before CD-ROM units. along with compatible FMV modules, are made available for other Amigas.

Fargo Electronics, an American company unknown to most Amiga enthusiasts, were drawing the crowds with their new colour printer. The Primera printer has already enjoyed considerable success in the States among PC and Mac users; Fargo now hope to repeat their performance in the UK by winning over us Amigatypes. Their printer comes in two versions. The cheaper, which creates pages via thermal transfer, comes in at £821.32.

Far better quality can be achieved with the £1,055 dye-sublimation printer, which produces remarkable results, normally achievable with printers costing at least twice the price. (The thermal transfer model can be upgraded to this specification for £234.) Both models come with an Amiga Preferences printer driver, and are available from Power Computing on # 0234 843388.

Power Computing themselves were showing off one or two new



Digita's Wordworth 3 boasts a much-improved user interface as well as a whole load of new features.

products. They're now selling internal versions of their high-density floppy drives, capable of storing 1.76Mb of information on a single disk. Internal models cost £75.95, or £79.95 to fit the A4000. Also from Power is the PC1208 memory expansion card for the A1200. The card will take up to 8Mb of extra memory via plug-in SIMM modules, providing zero wait-state access (which is to say the Amiga's processor never has to wait around for the memory). The card also includes a real-time clock, and space for a 68881 or 68882 maths coprocessor. Prices start from £69.95 for the bare board.

Digita International, show stalwarts that they are, were previewing Wordworth 3 to an eager public. The program promises to be another contender for the title of best Amiga word processor. Among its numerous features are: Auto-Correction, which will correct simple typing errors as well as a acting as a simple macro processor; modularity, meaning you only need to install those parts of Wordworth you need; an improved user interface including a floating toolbar; support for PostScript fonts; better scalable graphics and colour printing; and advanced typographical text effects.

Another byte at sound cherry

America company Digital Audio Design have released Wavetools, a 16-bit direct-to-disk hardware and software combination.

Wavetools will record stereo sounds in AIFF16 file format direct to any Amiga hard drive, with a frequency response of 10Hz to 20kHz. It comes in the form of a Zorro II plug-in card, compatible with the A1500, A2000, A3000 and A4000, though the manufacturers recommend that A1500s and A2000s should be accelerated.

Wavetools' software enables the user to cut and paste between different files and digitally mix tracks. The product maintains an SMPTE time code to enable sounds to be synchronised with video and animations. It costs \$350 and is available from Digital Audio Designs in the US, # 0101 714 562 5926.

Wavetools' direct competitors are of course the long-established AD516 and AD1012 audio cards from SunRize Industries. SunRize have recently announced an upgrade to their accompanying software, Studio Version 3's features include: an intuitive line-based cue list. automatic fades and cross fades, automated mixing, automated punching in and out, external MIDI mixer support, SMPTE chase, assignable tracks and multiple digital audio card support. When used with two AD516 cards, Studio 16 can play back 12 16-bit audio tracks from the Amiga's hard disk.

Studio 16 and the 16-bit, 8-track stereo AD516 card are available from MicroPACE # 0753 551 888 and White Knight = 0992 714 539 for £1,249, while the cheaper Studio 16 with 12-bit, 4-track mono AD1012 option costs £499.

A solution to the thorny problem of fitting hard drives to A600s and A1200s without invalidating their warranties has been announced by trade distributors ZCL.

The company have tied up a deal with ICL, the company contracted by Commodore to provided on-site

maintenance, to provide an "at-home" fitting service, complete with a 12 month warranty. ICL will also extend the warranties by a further 12 months on the machines themselves. The offer is available from independent retailers, Calculus and Indi stores. Call ZCL = 0543 414817 for details.

Opalvision Cheaper

Indi Direct Mail are selling the Opalvision graphics board at the lowest-ever price of £349.99.

Opalvision is a 24-bit graphics system providing up to 16.7 million colours on screen at once. It will work with the A1500, A2000, A3000 and A4000, fitting into a Zorro II or III slot.

Indi have also committed to offering people who've bought the board from them the forthcoming video modules at discount rates. These modules are expected to give Opalvision capabilities similar to that of the Video Toaster effects board (see page 14). Indi ≠ 0543 419999.

MORE ON YOUR DISK

You can now vastly increase the capacity of your hard drive with Disk Expander, a new utility being distributed by Micro-PACE UK and Power Computing.

Disk Expander works by a similar principle to that of Stacker, the famous PC program: it sits in the background, compressing files as they are saved to disk and decompressing them as they are loaded back into memory. Space savings of between 30 and 70% are claimed to be typical. Disk Expander will work equally well on hard, floppy and RAM disks.

The program installs via
Commodore's easy-to-use Installer
utility, is operated via an "intuitive
interface", and provides statistics on
exactly how much space it is saving
for you with each file processed. You
can get the program to compress
individual files, files grouped in
directories, or entire disk volumes.

Disk Expander costs £39.99 and is available from Micro-PACE UK # 0753 551888. Power Computing (# 0234 843388) are selling it for £30.

Stop thief

Protect your computer from thieves with the aid of a transfer from the Etching Transfer Company.

The company will place a small identification mark on the screen of your monitor – the mark can be a postcode for private users, or a logo for companies. The mark is impossible to remove without replacing the screen, making the equipment difficult for a thief to sell.

The transfers cost a minimum of £3 for three. Call the Etching Transfer Company on ₱ 0903 244642 for more details.

Commodore announce heavy financial loss

commodore International LTD., parent company of Commodore UK, continue to lose money hand over fist. The company posted figures for the financial year ending 30 June, revealing that they had lost a total of \$356 million.

The figures were announced on 12 November, but were expected to have been released back in August. One industry rumour put the delay down to Commodore hoping that their new CD³² console would gain a foot-hold before shareholders and creditors could panic.

The loss for the final quarter of the year was \$83 million, following a loss of \$177 million in the previous quarter (as reported in Amiga Shopper issue 28). Of the previous quarter's \$177 million loss, \$135 million was accounted for by write-downs of Commodore's assets (they were forced to re-evaluate a large stock of A600s before selling them at the new price of £199.99) and re-structuring, which was to make the company, in **UK Managing Directory David** Pleasance's words, "leaner and meaner". This leaves an operating loss of \$42 million.

Of the final quarter's \$83 million, around \$30 million is said to be an

operating loss, the rest again being put down to restructuring costs and inventory write-downs.

The result of all this is that shareholders' equity (the value of all shares) over the last year has dropped from \$325 million to -\$53 million.

Results were also posted for the first quarter, ending 30 September, of the company's current financial year: a loss of \$9.7 million. This brought shareholders' equity down further to -\$61 million.

The Chairman of Commodore
International, Irving Gould, issued the
following statement: "We have made
progress in reducing the net loss.
Having largely completed our
operational restructuring, we are now
planning to undertake a restructuring
of our debts to allow the company to
continue normal operations."

It was also revealed that
Commodore were negotiating credit
terms with some of their suppliers,
who have restricted the company's
credit and instituted legal action.
Commodore have also failed to pay
back two of their lenders according to
agreements made. The loans
amounted to \$33 million, and
Commodore are currently attempting
to negotiate a waiver from the lenders

so they can carry out their debt restructuring plans.

When asked to comment on these figures, Commodore UK's Colin Proudfoot, general manager of operations and finance, told *Amiga Shopper:* "What we're seeing is sales of A1200s picking up very strongly and CD³² taking off. Restructuring takes time and money. An operating loss of \$9 million in the first quarter compared to \$30 million in the previous quarter represents a big improvement. We're very confident for the future."

Commodore officials claim to be shipping some 22,000 CD³²s a week from their Philippines-based factory. The machine has recently been adopted by John Menzies, who are to stock it and its software in selected stores in their 274-store chain.

Commodore's confidence in the success of the A1200 and CD³² has done little to inspire confidence in one group of Amiga enthusiasts. They have banded together to form the Commodore Shareholders movement, and hope collectively to buy up enough Commodore shares to gain some measure of control over the company and put a stop to what they see as its mismanagement.

ROMBO'S VIDI FINALLY VENIT

Rombo's eagerly-awaited video digitisers, the Vidi Amiga (24) RT and Vidi Amiga (12) RT, are at last ready for release after long delays.

The more basic of the two, Vidi Amiga (12) RT, will digitise pictures with 12-bit colour accuracy in real time (that is, a maximum total of 4,096 colors). Monochrome images can be grabbed in 256 greyscales (but these are only displayable on AGA machines).

The accompanying software provides support for a variety of file formats, including those used on the Mac and PC. It has an image-processing section, providing a number of options including Edge Detect, Threshold, Negative, Light

and Dark. Animation is supported via a module called the *Animation Workstation*. Vidi Amiga (12) RT costs £199, is comaptible with all Amigas, and is capable of being upgraged to the same specification as Rombo's other new digitiser, the Vidi Amiga (24) RT.

This high-end digitiser is capable of grabbing truecolour, 24-bit images in real time (that is to say, it is capable of distinguishing between 16.7 million different colours), and comes with the same software features as its 12-bit brother. It will take inputs from both SVHS/YC and Composite sources. The Vidi Amiga (24) RT costs £299.

Epson prices tumble

Epson, already leaders in the 9-pin and 24-pin dot matrix printer markets, aim to improve their standing still further by dropping the recommended retail prices of 11 of their printers.

The price changes are as follows. For Epson's 9-pin range: LX-400 down from £199 to £175, LX-100 from £222 to £187, LX-850+ from £269 to £257, LX-1050 from £398 to £346, FX-870 from £516 to £445, FX-1170 from £645 to £563.

The changes for the 24-pin printers are: LQ-100 down from £253 to £231, LQ-570+ from £398 to £375, LQ-1070+ from £622 to £551, LQ-870 from £704 to £692, LQ-1170 from £880 to £798.

Printer prices from dealers are notoriously lower than those set as recommended retail prices by the manufacturers, so remember to shop around if you're after a printer bargain. For more information call Epson \$\pi\$ 0442 61144.

VIDEO GROUNDS

Galaxy Grafix have released a range of background images, for use in multi-media presentations and video titling, called *Media Backgrounds*.

Each image in the three disk set is an overscanned, high-resolution 16-colour IFF file. Subjects include cameras, books, CDs, phones, textures, a keyboard, videos, and so on. The set costs £14.95 from Galaxy Grafix • 0792 290998.

Software parties

In some circles, computer users sometimes have a reputation for not being very sociable, but 10 Out Of 10 Educational Systems (\$\pi\$ 0742 780370) are looking for people to organise "software parties" to promote their educational packages.

The company will provide you with a party bundle and give you a minimum £5 commission on each sale you make,

The Amiga Shopper Shareware Collection Here's the low-down on what you'll find on this issue's packed cover disk.

DICE

All Workbenches

DICE, or Dillon's Integrated C Environment, is generally accepted to be the most powerful shareware C development system around for the Amiga. It comes with not only a compiler and linker, but also a fullyfeatured text editor, giving you everything you need to start programming in C. It's also the compiler used by our programming expert Toby Simpson for his Sailing Through C column.

Unlike the other programs on our disk, DICE doesn't come with an icon which you can use to de-compress it. Instead, you need to use the Shell. DICE is stored on the cover disk as two separate archives, each to be de-compressed to its own floppy disk. Naturally, you can put DICE on to your hard disk if you have one.

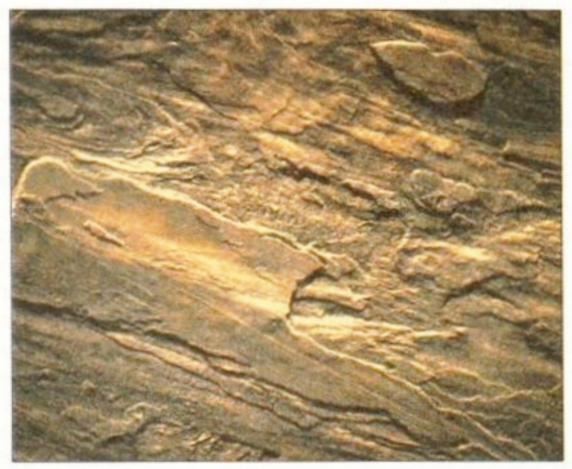
Full instructions for decompressing DICE and getting your system up and running are given in the cover-mounted book that comes free with this issue. In there you'll also find lots of example programs

you can type in and try for yourself. Have a good read, experiment, and before long you'll be writing your own C programs.

DICE is the compiler used to test

all of the programs in our Sailing Through C programming series, so you can compile all of these with it too. However, you cannot compile programs that make use of graphics library calls and the like without the addition of a set of files known as the Commodore Includes. You can obtain these direct from Commodore (send a cheque for

£25, made payable to Commodore Business Machines (UK) Ltd, to Sharon McGuffie, Commodore Business Machines (UK), Commodore House, The Switchback, Gardener Road, Maidenhead, Berks. SL6 7XA, and ask for the Native Developer's Toolkit) or by paying the \$50 shareware fee and registering DICE. (DICE is shareware, so if you



Roof Slate is a sample image taken from VideoWorld's Nexus Pro range of backgrounds for video work.

intend to keep using it please do register - you'll find details on how to do this in the text file register.doc, which will be in the docs directory once you have de-compressed

everything.). Better still, for £24.95 you can buy the full version of the Complete Amiga C book, which comes with the fully-registered version of DICE and the Commodore Includes, giving you with a complete, professional C environment. See the cover-mounted book for further details, or turn to page 74.

CSOURCE

All Workbenches

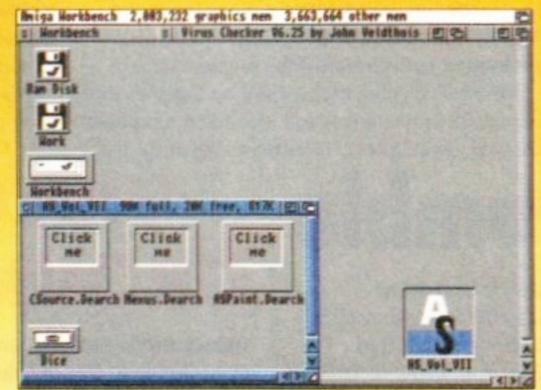
This archive contains the latest set of source code files to accompany our on-going C programming tutorial, Sailing Through C (see page 53). Dearchive the files according to the procedure outlined below. You can then load them into a text editor such as DME (as supplied with DICE) to look at the source code. Please note that double-clicking on the files' icons will have no effect.

An executable version of the address book program, called address.x, will be present on the disk you decompress to. You can run this from the Shell by simply typing its name. Remember though to

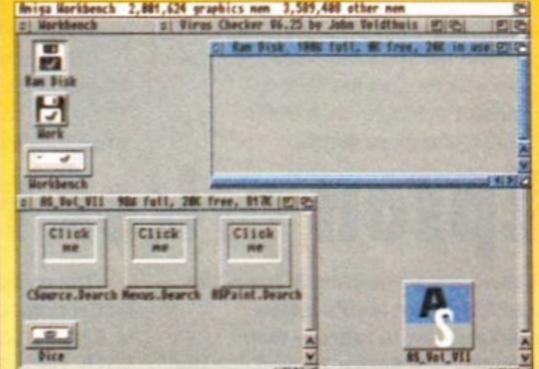
SO JUST HOW DO YOU GET AT ALL THIS

First you should switch on and boot up your Amiga with Workbench. The programs on the disk have all been compressed, and must be decompressed before they can be properly used. This process is pretty much automatic, so long as you follow the steps detailed here. (See the accompanying cover-mounted book for information on de-compressing DICE.) Before you go any further you need to decide where you want to de-compress the cover disk files to. If you have plenty of RAM, you may want to use the RAM disk. Another option is to de-compress to your hard disk. Alternatively, you'll need to de-compress on to floppy disk. If you choose this last option, then you'll need to have several blank floppies standing by. You can format floppies from the Workbench by single-clicking on their icon and then selecting the Format Disk or Initialize menu option (depending on the version of Workbench you are using).

Now insert the copy that you've made of this month's cover disk. You'll see the Amiga Shopper icon appear on the screen.



2 The next step is to double-click with the lefthand mouse button on the Amiga Shopper icon. A window for the disk will then open, in which will be displayed the four icons for the software on the disk this month. Apart from DICE, the programs are all stored as archives and can be accessed via the icons shown in the window, whose filenames are terminated with the characters ".Dearch".



3 Let's say that you want to de-compress the Nexus package. You'll need to decide where you want the de-compressed material to be stored. If it's on to a floppy, then insert the disk and open its window. If you want to place the files on to your hard disk or your RAM drive, then open their window instead. (Bear in mind that the contents of your RAM drive are lost when the power is switched off.)

VITAL: READ THIS FIRST

The first thing that you *must* do with your cover disk is to protect it from accidents by making sure that it is write-protected. To do this, make sure that the movable plastic tab on the disk is in the open position – that is, you can see through the hole. This means nothing can now be written to the disk, especially viruses. If you don't write-protect your disk and end up with a virus – well, that's your problem.

The next important step is to make a back-up copy of the cover disk – in case any nasty accidents happen while you're busy working with it. The easiest way to go about this is via the Shell. So, open a Shell window and then type the following at the prompt:

diskcopy df0: to df0: Your Amiga will now ask you to insert the SOURCE disk (that's the cover disk) in df0: and then press the [Return] key to continue.

Your computer will now read some of the information from the disk before another System

change directories to the one in which the program is contained: this directory also contains the database file used by the program, which cannot be found otherwise.

The source code for the address book program can be compiled with DICE (also included on this month's cover disk) although you will also need the Commodore Include files before you can create your own executable version (see the section above on DICE for details of this).

Requester window appears asking you to insert the DESTINATION disk (that's the empty disk you want to make a copy of the cover disk on). You'll find that you need to swap disks several times – a System Requester window will appear each time, prompting you to insert the appropriate disk.

If you have more than one floppy drive, you can of course copy from one drive to the other by using the following instruction:

diskcopy df0: to df1:

Right, now that you've made a copy of the cover disk, hide the original in a very safe place and work *only* with the duplicate.

CAN'T READ THE DISK?

We duplicate tens of thousands of disks, so inevitably a very small number will be corrupted – our copiers do carry out stringent quality-control tests, but the occasional duff disk will always sneak through. You'll know if this has happened to your cover disk

Requester window appearing to tell you that you've not got a DOS disk sitting in your drive, or a System Requester will pop up to tell you just as unhelpfully that a READ ERROR has occurred while one of the programs was de-archiving.

The solution is straightforward.

Just send the faulty disk to the address below, enclosing an envelope addressed to yourself for the return of your replacement disk – the padded variety are best – and we'll pay the return postage. The address is:

Amiga Shopper 33
Discopy Labs
PO Box 21
Daventry NN11 5BU

With the disk please include a brief note saying what the problem is. Also mention what Amiga you're using and the version of Workbench that you are running. A replacement disk should then come rattling through your letterbox within a couple of weeks.

NEXUS

All Workbenches

In this archive you'll find a sample image from VideoWorld's Nexus Pro range of background pictures. It's a digitised image of roof slate, in 16 colours and an overscanned resolution of 704 x 566 pixels. Images such as these are ideal for use as, among other things, backdrops to video titles.

To view the image, you must first de-compress it according to the

instructions in the box below and then load it into your favourite paint package/image-viewer, such as Deluxe Paint or Art Department Professional. The accompanying text document can be read by double-clicking on its icon.

The Nexus Pro range can be bought with images in both AGA and pre-AGA formats (like the sample provided here). We're reviewing it this issue, so turn to page 32 for our considered verdict.

ASPAINT

All Workbenches

ASPaint is an archive containing the source code to accompany our programming tutorial in our AMOS Action column. It is only of use to you if you own one of Europress Software's AMOS packages.

De-compress the archive according to the instructions given below. Having done that, you can load the resulting file (called ASPaint.AMOS) into AMOS (or AMOS Pro or Easy AMOS) and run it. If you own an AMOS compiler, you can compile the program first for extra speed. As you can see, the program is developing into a sophisticated package, with an extensive set of drawing commands already having been implemented. Study the source code in conjunction with the article beginning on page 101.

FAME AND EVERYTHING THAT GOES WITH IT

If you've got a program that you think will be of interest to Amiga Shopper readers, why not send it in? We're always on the look-out for good utilities or applications that could make the lives of other Amiga enthusiasts easier.

Your program needn't be particularly big or ambitious – just so long as it works and is useful. Then again, we wouldn't balk at a rival to Deluxe Paint, either.

Send your submissions to:

Cover Disk Submissions

Amiga Shopper

Future Publishing

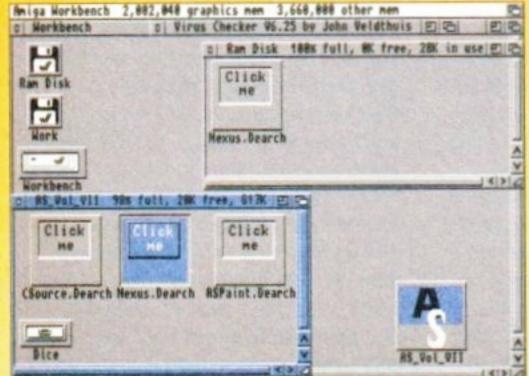
30 Monmouth Street

Bath BA1 2BW

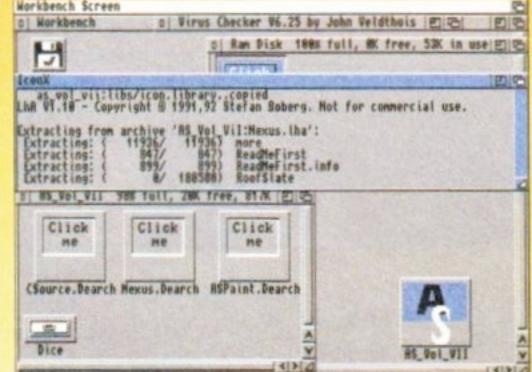
Please be patient waiting for a reply

– we receive a lot of submissions,
and like to evaluate them fully.

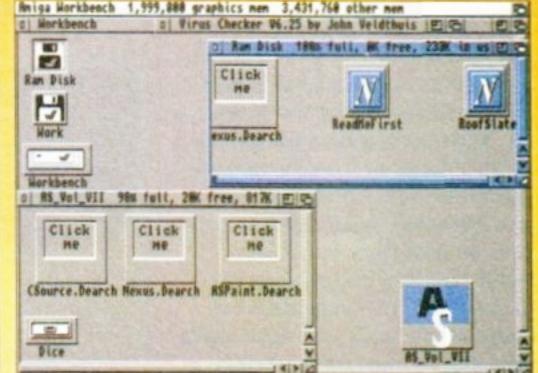
LOVELY SOFTWARE ON YOUR DISK?



O Drag the relevant icon (say Nexus.Dearch) into the destination window. (Drag an icon by putting the mouse pointer over it and keeping the left mouse-button pressed. Release the button when you've placed the icon where you want it.) Now double-click on it. The de-compressing procedure will automatically begin, and another window called IconX appears on-screen to tell you how it's going.



In the IconX window will be listed all the files as they are extracted from the archive. If you are using an Amiga with only one disk drive then unfortunately you'll have to get involved with a fair bit of disk swapping. A System Requester window will appear each time you need to swap disks – simply put whichever disk is requested in the Amiga's drive. (Keep the source disk write-protected to be safe.)

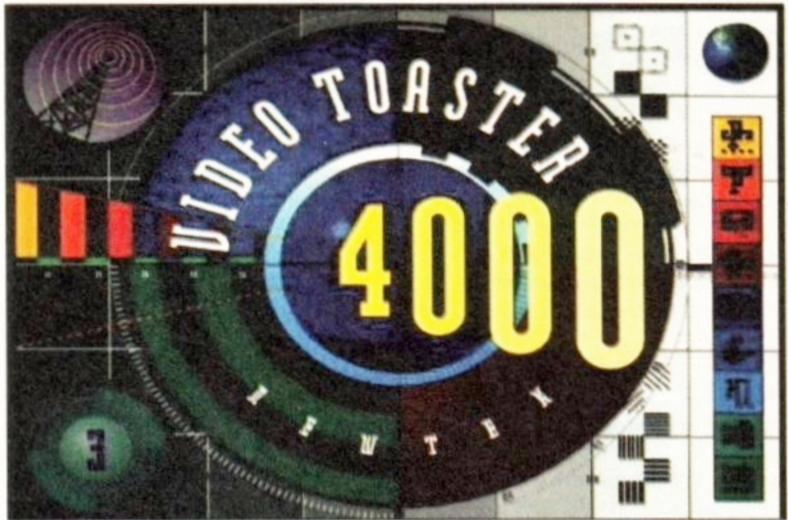


Once the IconX window has vanished the source window will still appear to contain only the Nexus.Dearch icon – that's because the window isn't automatically updated. Click first on the window's close gadget and then open the window again. It will reopen with the packages' icons displayed in their full glory. You can then run the programs or load the files as normal.

Another round of toast

he long-awaited Video Toaster 3.0 has finally become reality, and the hardware now fits not only the A1500/2000 Amigas but also the A3000 and A4000 models. But size is the not the issue here, for the best thing is that the Toaster software has been completely revamped (except for ToasterPaint) and lots of "hot new features" have been added which make me even more envious of my American counterparts in video, graphics and 3D production. Even owners of older Toasters can benefit, for the new software is also available as an upgrade without the Toaster hardware, though some of the new features (most notably 256,000colour Lightwave anims and the "full" set of wipes) will not be available on non-AGA Amigas (that is, A2000 or A3000 models).

Long-standing readers will recall our UK exclusive on the original Toaster way back in *Amiga Shopper* NewTek have recently upgraded their legendary Video Toaster, making it more desirable than ever. Gary Whiteley drools and dreams of a PAL version...

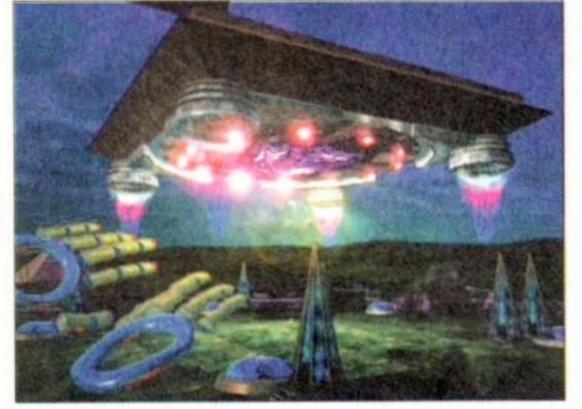


NewTek's Video Toaster 4000 screen. If you're involved in video effects work, at least in the NTSC-standard-based world, this should be a welcome sight...

mixer with effects, framestores, grabber, keying, character generator, 3D software and more) is to use video standards converters, such as the Prime Image converter reviewed on this page. However, this is an expensive, and not particularly effective, option. In truth the only proper way to do PAL video with a Toaster would be with a PAL version of the Toaster.

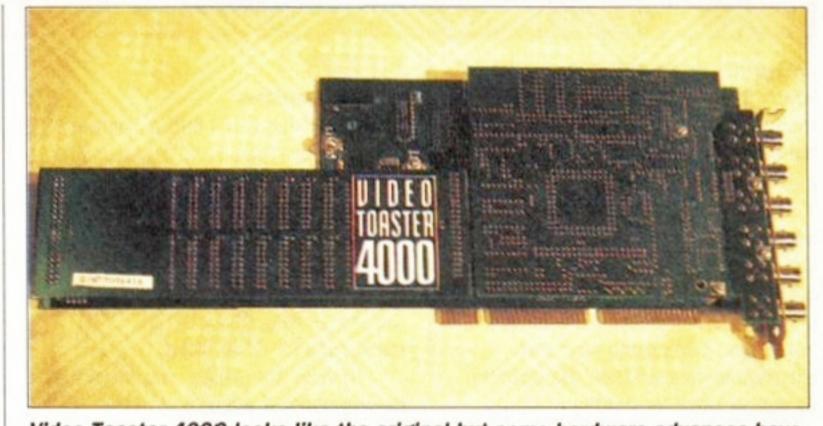
SO WHAT'S NEW?

The most immediate changes can be seen in the Toaster's nerve centre – the Switcher. Better looking layout, and many more wipes and effects – nine banks of 32 effects each are available with the A4000 (that's 288 in total), seven with an A2000 or A3000 (making 224) – including



A single frame from a recent Todd Rundgren video produced using Lightwave and the Video Toaster.

6. Since then two revisions of the software and one of the hardware have come and gone, but a PAL Toaster still hasn't materialised, even though it's two years since NewTek told us to expect one "within 18 months". Right now the only way for UK users to be able to use the Toaster in the way it was intended (as a video

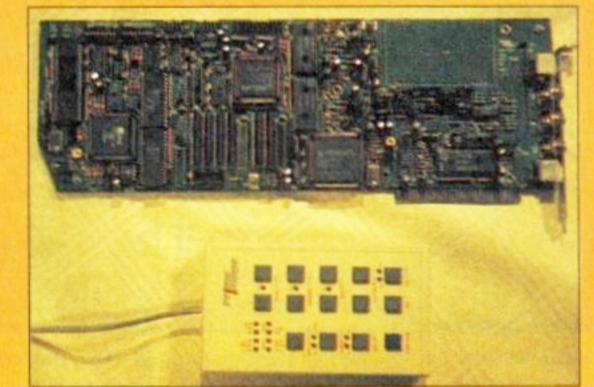


Video Toaster 4000 looks like the original but some hardware advances have been made. Owners of older Toasters can still use the new software though.

PRIME VIEWING?

t's not a PAL Toaster, but the Prime Image card has raised the hope of using the Toaster with PAL-standard equipment.

The Prime Image card is actually a TBC (Time Base Corrector), Proc Amp (Processing Amp) and Standards Converter all rolled into a single internal card that fits any Zorro (or PC) slot. As a TBC it smoothes out hiccups in the timing of a video signal (caused by mechanical fluctuations in the playback mechanism) as it is played back from videotape so the signal can be vision-mixed (switched, in US-speak) with another (TBC'd) offtape signal. Time Base Correction involves replacing the existing synchronisation information of a video signal with a brand-new set of correct



The Prime Image StdCon/TBC and remote unit. That's standards converter and Time Base Corrector, that is.

timings. Several cards can also be genlocked together.

As a Proc Amp it can make

adjustments to the colour, phasing, sharpness and other features of a signal, and also perform Chroma Killing (that is, making the output

monochrome by
"killing" the colour
information in the
video signal). It can
also transcode
between composite
and YC video, and it
can "framestore"
(Field or Frame).

Most importantly in this context, the Prime Image card can convert between PAL, PAL-M, NTSC, NTSC 4.43 and SECAM standards – meaning that it can

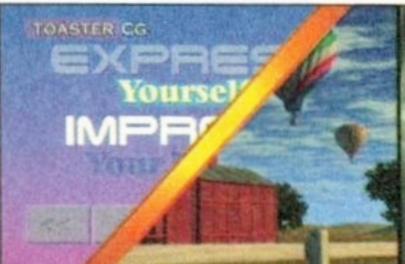
be used to convert your PAL output to NTSC, which can then be fed to the Toaster. But that's not the end of the

story by a long chalk.

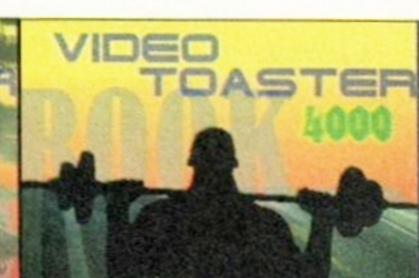
You'll also need a second Prime Image card to convert the Toaster's NTSC output back into a usable PAL signal. And if you want to make full use of the Toaster's excellent Switcher capabilities, you'll need an additional Prime Image card for each video input you plan on using. An Amiga 4000 has four card slots, the Toaster takes up two (the video slot and its adjoining Zorro slot), leaving room for only two Prime Image cards one channel in and one channel out. Each Prime Image card costs US\$1,695, and the optional remote controls (one required for each card) cost US\$285 each - and you'll need them if you want to use the cards to their maximum potential.

And for what? Let's face it, converting PAL (25 frames per second and 625 lines per frame) to NTSC (30 fps, 525 lines) requires some pretty









Just four examples (out of a range of 288!) illustrating the Toaster's video effects - though single frames can't truly do them the justice they deserve.

some memory-sucking but spectacular animated wipe effects with their own sound tracks (if you have an A4000). In fact some of these effects are so complex that the 6Mb A4000/030 I had on loan for the review actually refused to load them! Spaceship fly-throughs, soft-edged stars, flying logos - these are all part of the Toaster's new Switcher effects, which all seem somewhat faster than in version 2, even though the A4000/030 is probably slower than the accelerated A2000 in which I had a Toaster version 2.

Framestore loading is faster too, even from the A4000's slower IDE drive (slower than my SCSI drives, anyway) and keying also appears a little crisper. And a new option has

* ABCDEFCHI PAINT CG 3D 1 2 3 4 DV1 DV2 DV3 1 2 3 4 DV: DV2 DV3 SUPERIMPOSE -1 2 3 4 DV1 0V2 DV3 FREEZE TAKE AUTO S M F BIDEO TORSTER 4000

The Switcher, heart of the Toaster, has been cleaned up and expanded to give you even more options, particularly when the Toaster's used with AGA Amigas.

been added to the Switcher's transition speeds, so in addition to the pre-set "Slow", "Medium" and "Fast" speeds, you can also define your own transition speeds.

3D HEAVEN

Lightwave 3D, the Toaster's 3D renderer, has again been widely improved and a whole set of new and exciting features has been added. Bones (a system for making inanimate objects bend, stretch and rotate very easily) is

probably the most outstanding addition, though there are many others - including faster rendering, better lighting, new mapping techniques and much more.

Possibly the biggest bugbear (and one which could well put potential UK users off completely) is that Lightwave's rendering sizes are still preset to NTSC screen resolutions, so PAL users will require an image-processing program to scale the images to PAL sizes (probably losing quality in the process). If NewTek had allowed users to enter the screen sizes themselves (as several other 3D programs do) then anything might be possible. As it is, the choice is, unfortunately, dictated by the Toaster, not the user. Which is all

SYNC STRAINER

Another new product, from PreVue Technologies in the USA, is designed to enable you to use a multi-sync monitor (which must be capable of 15.7kHz operation) with an Amiga/Toaster set-up. It automatically adjusts the sync rates from the Amiga to meet the multisync's requirements, and is said to be all but transparent in use. Price was unknown at the time of writing but if you're curious PreVue can be contacted on = 0101 916 477 2905 or Fax 0101 916 272 1528.

fine and dandy for the average user in the US, but of little comfort to those of us chafing to use Lightwave

Modeler 3D, the Toaster's 3D "modules", has been given a facelift to bring it more into line with the look

for PAL work.

modelling program, has also been substantially improved and, like many of the Toaster's other and feel of Workbench 2 and 3 cleaner and neater, with better buttons and easier-to-use selectors and menus. And lots of new (and useful) tools and functions have been added to make Modeler more powerful, yet easier to use: Boolean operations, spline curves, text

LIGHTRAVE

Warm & Fuzzy Logic (yes, that's really their name!) showed a US\$499 device called LightRave at this year's World of Commodore show in Pasadena. LightRave is a serial port dongle and software combination which fools any Amiga into thinking it has Toaster hardware installed, thus making it theoretically possible for Toaster software such as Lightwave (and presumably Modeler) to run on any

Amiga. There do seem to be some potential legal problems, and I'm led to believe that the dongle was itself quickly cracked, making a stand-alone version of Lightwave possible by simple pirating methods - so we may well see NewTek move to kill this product very quickly. It's worth noting too that all the other Toaster functions will not work without authentic Toaster hardware.

hefty compromises. What happens when 100 lines are dropped and where do the five extra frames come from? Immediately we're looking at some significant picture information juggling. And then the Toaster's NTSC output has to have five frames a second removed and 100 lines per frame added. From where - thin air? Of course not! Some frames and lines are inevitably going to be doubled up - or at least concocted out of existing lines and frames to look like new ones (which, of course, they aren't).

The result? A smooth PAL input becomes a jerky, somewhat degraded shadow of its former self, leaving me in no doubt why proper commercial standards converters can easily cost in excess of £10,000 each.

No disrespect to the Prime Image card - it's an impressive TBC/Proc Amp/standards converter for NTSC work - but having to carry the can for

making PAL Video Toasting possible seems a little harsh. Standards conversion is not the answer. A fullspec PAL Video Toaster is. And the sooner this happens the better. Why should America have all the fun? A PAL Toaster would certainly sell by the van load!

The Toaster 4000 is awesome (well, everything except ToasterPaint,

SHOPPING LIST

Prime Image StdCon/TBC.....US\$1,695 plus

\$285 for optional remote control By: Prime Broadcast Equipment **= 0101 408 867 6519 Available from**

Micro-PACE UK Ltd **2** 0753 551888 or Vortex = 081 579 7105. Call for UK prices.

which is still pretty awful) and I want one. But I'm sure as hell not going to buy a kludged-up system which has to rely on over \$5,000-worth of standards conversion cards to get some kind of PAL output.

CHECKOUT PRIME IMAGE

Quality

Good, as far as cost vs quality and features is concerned, but in the context of converting moving PAL images into Toaster fodder and then back again the answer has to be that these cards sadly do not cut the mustard.

Documentation ,,,,,,,,,,,

None supplied with review copy.

Ease of Use

Not difficult to use if you have the remote control; otherwise it's down to setting DIP

switches on the card itself and then just plugging up the video kit.

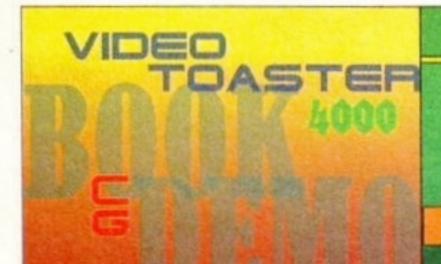
Value for Money

Relatively cheap as far as standards

converters go, but expensive where PAL Toasting is concerned.

Overall rating

I don't want to imply that the Prime Image is a bad device (it isn't), it's just not really suited to having to convert PAL-NTSC-PAL, which is what PAL Video Toasting requires. One way is fine, both ways is just too much.



LEADERBOARD

ROUND ONE

6 66 CLARKE

HODGE 68

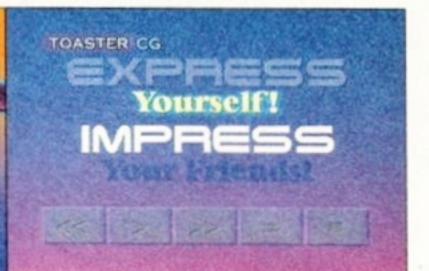
WHITELEY 69 -3

1993 GOLF TOUR

TOASTER CO

WITH EASE

MAKE CAPTIONS



Some typical examples of ToasterCG work. The Character Generator now even comes with around 280 PostScript fonts - what more could you ask for?

importation, drilling, tapering, bevelling, and displacement mapping, which uses a bitmap image to actually move (or displace) points in an object (unlike bump mapping, which only makes an object appear bumpy).

REFORMED CHARACTERS

ToasterCG (Character Generator) has also had a radical spring clean, and it has become much easier to use and far more flexible, now incorporating on-the-fly PostScript font import and scaling - meaning that a wealth of fonts is now easily available. NewTek even provide around 17Mb of PostScript fonts to get you started - that's around 280 great fonts to use as you wish.

I must say I was very impressed at the way ToasterCG could scroll 300-line text smoothly across the screen, and pleased at the new control the user is given when it comes to layouts - letters can now be selected individually and changed in style, colour or size, or any combination of these, very easily. Colours and sizes can be mixed on lines and justification is quickly achieved, making ToasterCG the program it always should have been.

ChromaFX, the Toaster's filtering system which can do live coloration effects on incoming video images, has not been updated this time around, and though some of the

THE SCREAMER

You might have heard that NewTek are planning to release something called The Screamer around the time you'll be reading this. But in case you don't know what I'm talking about, here's a reminder: The Screamer is a dedicated RISC-based rendering engine for Lightwave, running at up to 600MIPS - which is enough to render Lightwave animations in real time! And although you might think US\$10,000 is a lot to pay for such power, go and check out the competition - you'll then realise just what a bargain it is for the professional CG animator. The rest of us, however, will just have to make do with its rumoured lesser-powered relatives.

effects are very spectacular indeed, I have to admit that I'm still a little intimidated by its workings and it hasn't been made any more accessible.

And so to ToasterPaint, the black sheep of an otherwise outstanding

Smooth Set Val Est | Core | Parts | Undo

A much-improved Modeler 3D now sports lots more powerful functions, including Boolean operations, spline curves, bevelling, tapering and heaps more.

collection. Why ToasterPaint remains so neglected is beyond me. It never was the best of paint programs even when it was new, and three years later it looks (and feels) positively dull. As a DigiPaint clone it never really shaped up to the requirements of a 24-bit program, yet the opportunity to improve it has been consistently ignored. I hope this changes soon, because it really does let down the rest of the side.

AS FOR INSTALLATION...

The biggest drawback with the current software is that it comes on 45 disks (29 normal-density disks for non-AGA machines plus an additional 16 high-density disks for AGA Amigas) and you don't get any choice as to which parts of it you wish to install. It's a case of all or nothing.

You can, of course, delete items you don't require after installation (such as the demo images and animations the AGA animations alone require over 17Mb) - but you can't restore at will from the original disks unless you load the whole lot in again! So make sure you've got a tape streamer or other mega-backup device handy if you want to

MODELER 3D

A great example of Lightwave and Modeler's combined modelling and rendering capabilities. Great, even if you never used the rest of the Toaster's features...

chop and change the Toaster software!

SYSTEM REQUIREMENTS

The Toaster requires a well-charged Amiga to give of its best. It will run without an accelerator, but an '030

> or '040-equipped Amiga is recommended, as is at least 9 or 10Mb of RAM (18Mb recommended on the Amiga 4000). Loads of hard disk space is also required - 200Mb is probably enough to get you seriously started (the Toaster software alone requires about 120Mb on an A4000 installation, and

around 90Mb on other machines).

You'll also need a standard RGB monitor such as a Commodore 1084, because the Toaster takes some of its synchronising information from the monitor, or a Sync Strainer if you are using a multisync.

If you want to use PAL video sources you'll need a standards converter and Time Base Corrector for each source and another for the output (see the Prime Image review on page 14). Plus monitors, cameras, videotape recorders, and all the usual video accessories.

If you just want to use Lightwave then you'll need either an NTSCcapable monitor (that's at 3.58MHz, not 4.43MHz - unless you have a standards converter you'll only get monochrome output) or a PAL

monitor and standards converter. AS

Gary Whiteley can be contacted by email as drgaz@cix.compulink.co.uk

00000000 SHOPPING LIST

Video Toaster 4000......US\$2,395 By NewTek Inc., 215 E. 8th Street, Topeka, Kansas KS66603, USA. **☎** 0101 913 231 0100. Fax: 0101 913 213 0101

Supplied by MicroPACE UK Ltd **☎** 0753 551888.

CHECKOUT TOASTER 4000

Features

What can you say? As the heart of a video post-production system, the Toaster does most of the things the average (and not-so-average) video producer requires. There are a number of extras I could think of (compositing,

image-processing, sound mixing), but

what the heck! At \$2,395 the Toaster is still a steal.

Documentation

Very substantial, but would need to be twice as thick to cover all areas fully, even though it already contains loads of good tutorials and information.

Ease of Use

Depends which parts you're using (the 3D side can be quite daunting) but on average the Toaster is quite straightforward to use.

Value for Money

If I were in the US I'd have to say that the Toaster really is a bargain - at least when you compare like for like. In the UK, considering the extra cost of getting around the PAL incompatibility, it remains an expensive luxury.

Overall rating

I love the Toaster - it's a brilliant idea, well executed and getting better all the time. If I lived in the US it would be great to have one (or more) to use in my video productions. Elsewhere (that is, the greater part of the non-NTSC world) a complete Video Toaster is about as much use to the well-heeled videomaker as a chocolate fireplace though specialists will still find a lot to drool over in the 3D features.

Video dream machine

FrameStore - no, not a shop that frames pictures but another "realtime" digitiser from Germany. Gary Whiteley gets the picture.

t seems like only a couple of issues ago that we reviewed FrameMachine, Electronic Design's real-time digitising card for Amigas with Zorro slots. But that's because it was. (Amiga Shopper 31, in fact - order it on page 106 if you missed it.) Now they've produced an external realtime digitiser suitable for use with any Amiga (including the A1000 if a suitable adaptor is used).

Called FrameStore, the hardware comes in a sturdy plastic case identical to the ones that contain the company's PAL and YC genlocks. It has both YC and composite video inputs, an external power socket (German-style 2-pin PSU supplied) and an on/off switch on the front. Connection is made to the Amiga via a generously long cable to the

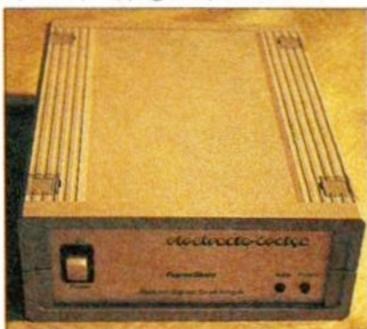
parallel port.

Before use you'll have to load up some software, though if you have a hard disk you can easily install it there. You'll also need to make a few settings to tell FrameStore whether your video source is PAL or NTSC (it can accept either), whether it is from VCR or camera, and if you would like to use overscan.

Next you set up your shot using the Preview feature, which enables you to see the incoming images in black and white in full-screen low or medium resolution. Unfortunately, Preview doesn't update very fast, so users wishing to accurately freeze on specific frames of an incoming video may well experience some difficulties. The frame is captured when the left mouse button is pressed, after which conversion from

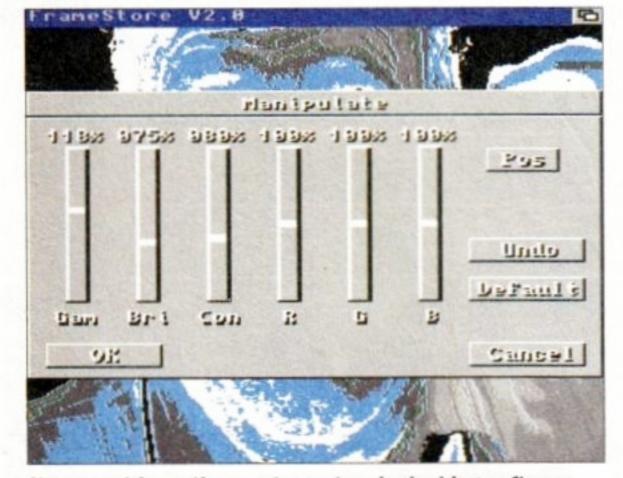
FrameStore's native YUVN format (as used in TV systems) can begin.

I grabbed images from a variety of video sources (including PAL YC and composite and NTSC composite) and I was impressed with the quality of the images I was able to grab, though I must admit to being fortunate enough to have a 24-bit card on which to display them in all their glory. Mind you, AGA users will be pretty chuffed too, and even 16colour dithered hi-res images looked quite acceptable. All the grabs of video wipes in the Video Toaster update (see page 14) were made



You don't need a spare Zorro slot to use FrameStore - any Amiga will do!





It may not have the most spectacular-looking software, but FrameStore is still quite easy to use.



Given suitable video signals, Electronic Design's FrameStore can provide excellent quality grabs.

GOING A BUNDLE

There are a couple of surprising extras provided free with the FrameStore. The first is ASDG's Art Department (TAD), which is a forerunner of Art Department Professional (ADPro) and can be used for image processing and picture conversions - though it lacks AGA support and many of the nice features that ADPro now boasts. There's also a trade-up deal. The second extra is Scala 1.13 (AKA VT) - well worth getting for free, even if, like TAD, it is now getting a touch long in the tooth.

BEGINNERS

BEGINNERS START HERE

There are two kinds of digitiser, generally termed "slow scan" or "fast scan". Slow scan digitisers are those which require the incoming video signal to be frozen or completely still, because they capture an image directly from the video signal, a strip at a time. Any movement of the video will show up in the grab as blurring, jitters or flickering. Examples of slow scan digitisers are Rombo's Vidi-Amiga 12 and NewTek's DigiView.

Fast scan digitisers, such as VLab, ColourPic and FrameStore, are the "real-time" ones, though this usually only means that the digitiser

can capture a complete frame of video into memory in the time it takes to be displayed (that is, one 25th of a second in PAL or one 30th in NTSC). This memory is special video memory built into the digitiser. The image is held here as long as needed, allowing you to grab from it any number of times and manipulate the resulting image without fear of not being able to capture the frame again. "Real-time" digitisers however usually take a while to process the grabbed image into something the Amiga can use - typically a minute or so (depending on the grab size

and the Amiga's speed).

BEGINNERS

using FrameStore directly with the Toaster's Program output. (AS)

Requirements

Any Amiga with at least 512K of RAM (though more is required for all modes and screen sizes), and at least AmigaDOS 1.2. An accelerated Amiga, a hard drive and a 24-bit display card are helpful, but not obligatory. Some form of video feed is also required.

000000000 SHOPPING LIST

FrameStore£379.95 By Electronic Design From Micro-PACE UK Ltd, Unit 10, Perth Trading Estate, Perth Avenue, Slough SL1 4XX, Berks. **☎** 0753 551888.

CHECKOUT FRAMESTORE

Quality

Excellent quality grabbing (if the input is up to scratch).

Documentation

Another fine mess of Anglo-German translation, especially the disk-based help files. Lucky they're not vital ...

Ease of Use

Provided all your connections go well, it's quite easy to get to grips with, and the software is pretty obvious to use.

Speed

It's not the fastest "real-time" digitiser around, but it gets the job done very well, though not as expertly as MacroSystem's VLab, its obvious competitor.

Flexibility

Digitise both PAL and NTSC video, save in 24-bit, YUVN, RGB8 and E-Design's own EDAN format, plus all the current IFF modes, including AGA. Also features colour and other corrections and some limited control over size.

Value for Money

Not particularly cheap, especially when compared to the VLab range.

Overall rating

High-quality grabbing at a relatively high cost, and with less extensive software and functions than VLab. But certainly a digitiser worth taking a closer look at.

We at SOFTWARE DEMON Ltd-would like to wish all our customers past, present and future all the best at Christmas. To celebrate the season of good will we have decided to offer the best items in home computing at a special Christmas price.



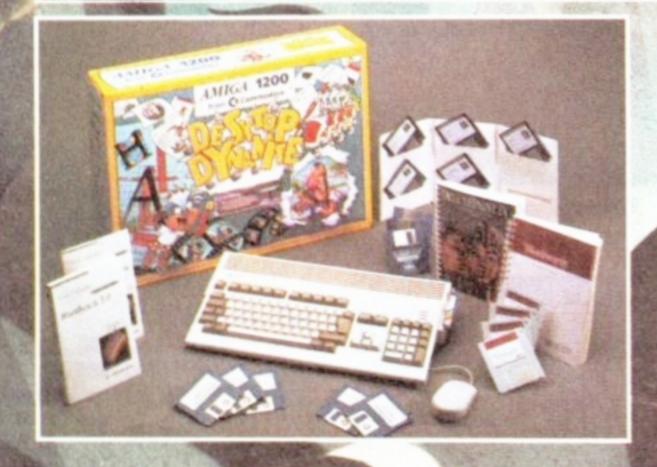
EXTERNAL HARD DRIVE UNIT FOR THE B1200

These external hard drives some in an ABS box styled to match the Amiga Al 200. They plug in vie the PCMCIA slot and include an external PSU so not to invalidate your Commodore warranty. Ultra fast clata transfer rate of 2Mb/sec. Full I year return-tobase guarantee. They come supplied with all the necessary software to mount and configure the drive.

The fastest IDE hard drive ever received by GU Amiga" One of the most innovative bard-

ware products for the \$1200 to date" MALL BROOMFIELD CU AMIGA 10/95

3139 ごごう £249 3450m £319 =12511E CI.COVI 220115 3332



AMIGA A120 SKTOP DYNAMITE PACK FROM EDOS!

The A1200 sports many features of the A4000 series. Based around the 68020 processor, 2M < b of RAM and WB3 as standard. A full range of hard drives are also available. The desktop dynamite pack is also supplied with a range of software specifically for the AA chipset, including DPaint AGA and Wordworth AGA plus others with a total RRP of over £300.

To put the icing on the cake SOFTWARE DEMON Ltd are offering commodores latest Amiga Al200/Software bundle at the seriously reduced price of £299 when an OVERDRIVE 35 and Al200 are purchased together.



PLEASE MAKE CHEQUES AND P.O PAYABLE TO "SOFTWARE DEMON Ltd." PLEASE QUOTE YOUR CREDIT CARD NUMBER AND EXPIRY DATE

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE E&OE, ALL TRADEMARKS ACKNOWLEDGED





SOFTWARE DEMON

39/40 QUEENS CHAMBERS, QUEENS STREET, PENZANCE, CORNWALL, TRIS 4HB

COMPUTERS

AMIGA A400/040

The flagship of the Commodore
Amiga range. Based around the
68040 processor. Comes with Hard
Drive, 2+4 RAM and WB3.

85Mb version	£1899
120Mb version	£1919
170Mb version	£1939
250Mb version	£1979
340Mb version	£2069
426 Mb version	£2149

AMIGA A4000/030

The same specifications as it's big brother but designed around the EC68030 processor. Comes with a Hard Drive, 1+1 RAM and WB3. (FOR 2+2 ADD £69)

85Mb version	£899
120Mb version	£969
170Mb version	£999
220Mb version	£1015
256Mb version	£1039
340Mb version	£1099
426 Mb version	£1199

HAVE A SECONDARY HARD DRIVE FITTED AT THE SAME TIME AS PURCHASING YOUR A4000

85Mb	£899
120Mb	£129
170Mb	£149
212Mb	£189
250Mb	£229
330Mb	£299

CD32 CONSOL€

This machine represents the future of home entertainment and video game play. A self contained CD console which you can expand to a full CD based home computer.

ALL FOR JUST £279

UPGRADES

Finding that your A4000/030 isn't quite man enough for your present projects? Never fear Software Demon is here.

68040 CPU, MMU, 40MHz FPU, 040 PANEL PHOTON £699

50MHz CLOCK SPEED, 50MHz FPU, MMU HELLFIRE £299

MATHS CO-PRO (PLCC)

33MHz 68882 (WITH CRYSTAL) £99 40MHz 68882 £129

MEMORY

single sided SIMMS module for A4000 1Mb RAM £39 4Mb RAM £149

ACCELERATORS

Our accelerators are produced for the A1200 by GVP, a watch word in quality and reliability. Both boards are user fittable via the trapdoor so as to maintain your warranty.

GVP SCSI/RAM BOARD

This board has slots for up to 8Mb of Ram, a maths co-pro (FPU) and has and includes an SCSI interface as standard.

OMb/NO FPU	£179
4Mb/33MHz FPU	£349
SCSI CABLE KIT	£44

GVP A1230 BOARD

This board features a 68030 processor as standard and also has slots for up to 8Mb of RAM and a maths co-pro.

OMb/NO FPU	£269
4Mb/40MHz FPU	£439

GVP ACCESSORIES

33MHz 68882 FPU	£69
40MHz 68882 FPU	£129
32bit 1Mb RAM	£64
32bit 4Mb RAM	£153

SOFTWARE

GRAPHICS

REAL 3D 2	£378.50
ART DEPTH PRO	£134.99
MORPH PLUS	£136.99
DPAINT AGA	£66.00
DPAINT IV	£59.99
SCENERY ANIMATOR 4	£54.99
VISTAPRO 3	£44.99
MAKE PATH	£23.99
TERRAFORM	£23.99
SCALA MM210	£ POA
SCALA MM300	£ POA

UTILITIES

£31.99
£32.99
£259.00
£46.50
£49.95
£47.50
£53.99
£81.95
£39.99

MUSIC

STEREO MASTER	£29.99
BARS & PIPES PRO	£215.99
TECHNOSOUND 2	£58.50

WP & DTP

WORDWORTH 2	£78.99
FINAL COPY 2	£74.99
PEN PAL	£28.95
PAGESETTER 3	£43.99
PRO DRAW v3.0	£64.99
PRO PAG€ v4.0	£89.99

GAMES

CIVILAZATION AGA	£39.00
CIV AGA UPGRADES	£19.00
(SEND YOUR DISK AND	DETAILS)



ORDER HOTLINE (0736) 331039 TECHNICAL SUPPORT AND FAX (0726) 331499

PLEASE MAKE CHEQUES AND P.O PAYABLE TO "SOFTWARE DEMON Ltd."
PLEASE QUOTE YOUR CREDIT CARD NUMBER AND EXPIRY DATE

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE. E&OE. ALL TRADEMARKS ACKNOWLEDGED.

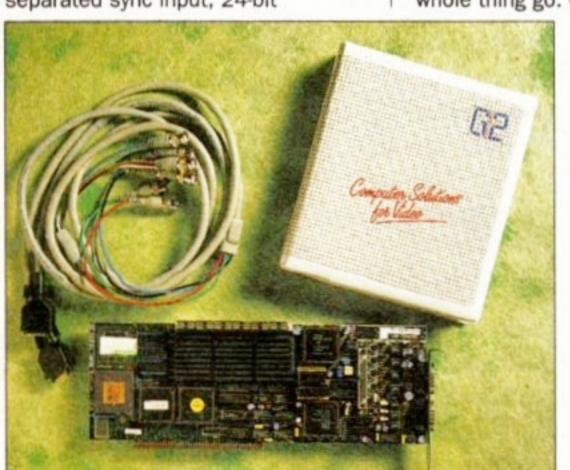


VISA

The perfect paintbrush?

his is a 32-bit Zorro 3
graphics card, one of the
most expensive expansions
currently available for the
Amiga. It requires either an A3000
or A4000 with 12Mb of Fast RAM
and 2Mb of Chip RAM – you can
squeeze by with 8Mb of Fast but I
wouldn't recommend it.

Image Engine has two halves.
The first is the hardware: a bestquality RGB framegrabber with
separated sync input, 24-bit



The Image Engine: 32-bit graphics, but only for top-end Amigas – and it'll cost you. You'd better believe it.

framebuffer, 8-bit alpha channel and broadcast-quality encoder. The second half is the software. It's called *Imagica*, and it's a set of simple (and not so simple) graphics paintbrush controls – see the box below for the full lowdown.

Graphics display cards have a

There's a fair choice when it comes to 24-bit graphics cards. Pat McDonald checks out the latest and greatest 32-bit board from G2, Image Engine.

broadly similar design. They've got a memory store for the digital picture information, some finely-designed video circuits to pump out a broadcast-quality signal, and a control processor or two to make the whole thing go. One feature unique

to this card is a nonvolatile graphics store. You're busy on a graphic and there's a power cut or crash. Other cards forget their contents; with this one, just get power back and run Imagica again, and your graphics are unchanged. That one feature alone is pretty impressive for those whose time is precious.

The output is 768 x 576 pixels as

a default, at 15KHz. In other words, broadcast quality – G2 are very careful about calibrating their units. At the top end of the board, near the 9-pin input/output connectors, you can see the RGB and sync test points. But high specification isn't the only reason that the Image

Engine costs so much.

At the other end of the board is the graphics processor – a Texas Instruments 340 DSP. I could blather on about what this chip can do, but it would be a bit irrelevant because a large number of *Imagica's* functions are handled by the Amiga processor, not the TI chip. As G2 keep developing Imagica, more operations will be done by the 340, resulting in much faster operation.

Not that Image Engine is a slouch at the minute. Sure, on 25MHz 68030 machines it takes a couple of seconds to bring up a menu. But when you're actually manipulating a brush, carefully retouching some graphics, you've got a precise tool that works just right.

So it's fast right now, and will get faster as time passes. G2 still haven't recovered anywhere near their development costs, so I think the price will stay as it is for quite some time.

WHAT YOU GET

As standard, G2 supply the board, one lead for output and another for input, a manual and a disk containing the *Imagica* software and a **Harlequin.library** file. Aha, Image Engine is Harlequin compatible! Time

to get some quotes in.

Martin Lowe, of Amiga Centre Scotland, the authority when it comes to Active Circuits' Harlequin, had this to say: "I look on the appearance of Harlequin-compatible boards as an accolade to the best system, rather than a basis to sue for hundreds of thousands of pounds. At the moment, Harlequin is Grafexa-compatible, which is a stepping stone in between what we have now and RTG".

Erm, what's RTG?

"Re-targettable Graphics. In other words, a standard to let Workbench programs display on any platform, be it built into the machine or a separate graphics cards. CBM have stated that it will be launched alongside the AAA chipset sometime in 1994".

How Harlequin-compatible is the Image Engine? Not totally, as Dudley Bradfield of G2 explained. "When we say it's Harlequin-compatible, we mean it will work fine with all the support software that you get with a Harlequin. It won't necessarily work with all third-party Harlequin software". It certainly doesn't work with Amiga Centre Scotland's Single Frame Controller (see page 29).

G2 must still be very proud of

IMAGICA: THE BEST AMIGA COMPOSITING SOFTWARE

Want to take elements from two or more different images, and mix them around? Of course you do – image-compositing is a way of taking existing material and making something new with all the pieces. It's not a new technique – Monty Python were doing it years before the word "computer" came into common usage.

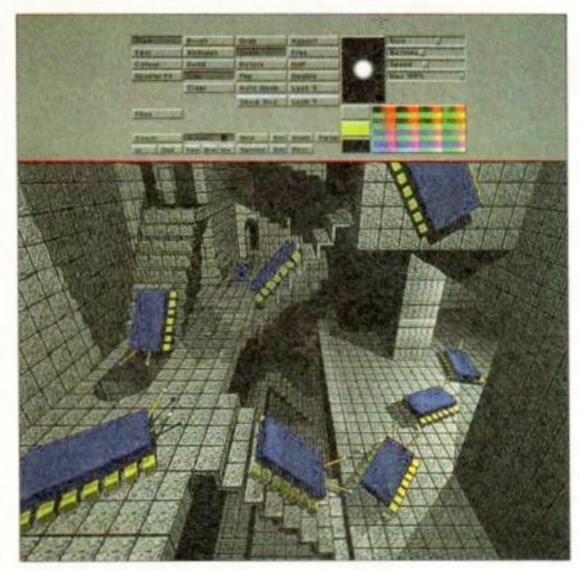
Imagica makes the whole process much more precise, and is at the other end of the quality spectrum. Existing Harlequin users can buy Imagica for use with their graphics cards, although it isn't as fast on a Harlequin as on an Image Engine, and £700 is a lot for a manual and a disk. G2 were thinking of doing an AGA version of Imagica, but with the release of Brilliance they have decided not to bother. (For the low-down on Brilliance, see Amiga Shopper 32 – and turn to page 106 to order a back issue if you missed it.)

Image-compositing is great fun for everyone – you certainly don't need to be an artist. But, professional, television compositing is certainly a specialist market. I can see why G2 don't want to get involved with competing in the low-price arena.

This is what Imagica has to offer.

- Basic drawing. Imagica powers up showing the contents of its image buffers two rectangles, black and white. To get the menu to come down, just whip the mouse to the top of the screen. Pulling it down below the menu removes it again. Imagica supports the usual point, line, box, polygons and circles, but the brush is the main drawing tool.
- Everybody knows that interlaced graphics flicker on a 15kHz monitor. If you haven't got anything better (though if you can afford Image Engine, why not?), all you do once you have digitised your graphics is select the solid filter, and Shazam! Interfield jitter is removed (although the picture is slightly blurred as a result).
- The heart of the whole system is the fine brush control, displayed on all menus. The size, subtlety and speed can all be finely controlled via sliders. Of course, custom brushes can be chopped out of the screen, and distorted to your heart's content. That's what makes *Imagica* the perfect paintbrush!

- Want some words slapped on your picture? The software will happily load all bitmap and Compugraphic fonts, and print them with a brush texture (it may be a two-step operation, but it does it) and even supports a cutesy feature to alter the exact slope of your italics.
- (That's them in the bottom right of the *Imagica* control screen opposite.) Well, if you want to use a precise 256 rating, then you may notice that this colour bar is exactly 256 pixels long. The colour mixer isn't illustrated imagine a box with four corners. Put a colour in each corner, and the intermediate tones are displayed. Quicker and more precise than mixing colours on a palette, although less aesthetically pleasing.
- here) and stencil work. Black levels can be tweaked precisely, and the board can lock to an external sync source even if it isn't digitising. You can just hit <F1> and <F2> on the keyboard to stop your picture from jumping.



This composite screenshot shows Imagica in action, modifying a cover image from a recent Amiga Shopper.

the Image Engine though, because they've built a dongle onto the board. Only the supplied version of Imagica will load on a particular board. They could have gone the whole hog and put Imagica on a chip on the board, but that would have made upgrades even more expensive.

One feature that they decided not to use is an ICD connector. G2 designed a transcoder on a board, which could translate composite video and S-VHS signals into RGB for digitising. The trouble is that if you feed such a relatively poor signal into the digitiser, it doesn't really show off how good it is. So they kept Image Engine high-end instead.

It could be a bit of a problem, because there are quite a few studios where RGB video is not used. It means only those with the best quality equipment can even contemplate getting an Image Engine, although of course if you have your own broadcast-quality transcoders then you'll be laughing. If you can't feed it RGB output from a video source, then Image Engine can't digitise anything.

The manual is a hugely unsatisfying book, basically a list of the Imagica controls and a few "how to" pages. However, the nature of Imagica is such that you only use it for occasional reference when you're learning your way around - much more fun than wading through page after page of waffle.

One thing that isn't in the manual (and should be) is how to actually fit the board into an Amiga. Official post-review advice from G2: do not try to mount the board in the bottom slot of your machine, because the weight of the custom hardware chips causes the board to flex, which can cause short circuits.

That's exactly what happened with my A3000. An overlong pin on a capacitor shorted on the case, which killed the 340 processor. Mind you, I was using an ex-demonstration board which wasn't of the same build

quality as a production unit. In typical computer journalism style, they'd sold it to someone before I'd finished. But then it took Dudley about ten minutes to fix.

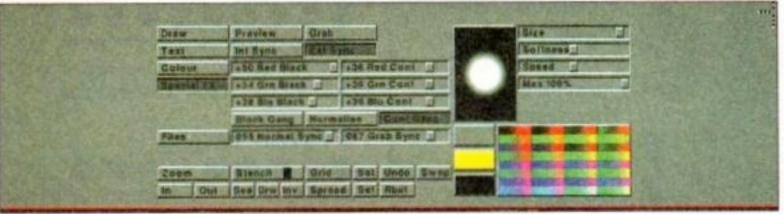
Remember, Image Engine doesn't fit in the video slot. That means you either need two monitors (one for the Amiga and one for the card) or a switcher box to switch

The top half of Annie Lennox has been given a quick colourised suntan. Took me about a minute to do freehand. Had I used a rectangle command it would have been about four seconds. Easy isn't the word!

inputs to one monitor. Imagica will multitask, but it requires such huge amounts of RAM that you shouldn't expect anything chunky to run.

AND THE KITCHEN SINK

Once you've got it all connected and start loading 24-bit images, one thing is immediately apparent - your monitor picture is dark. That's because the board is working properly and not producing a hot signal like the Amiga. A quick twiddle



Imagica offers brilliant image-compositing features, but no Undo button - a left mouse button click applies an effect, and a right button click removes it.

and up comes the brightness.

Digitising a grab (you can preview the picture through the board) takes about a second. After that, you can start taking graphics from one image and transferring them to the other. You can do graphic rubthroughs, colourise areas to change the colours while leaving greyscale levels the

same, and generally chop and change to your heart's content.

And you enjoy it. After a few difficult minutes finding out how an option works, you appreciate the vast range of possibilities without ever rendering a computer model again.

What makes it such fun is the brush controls. I don't just mean the display affecting brush operation they're good, but nothing special. What is special is that you hold down the left mouse button to achieve the effect. Or hold down the right mouse button to remove it. Simple. No more

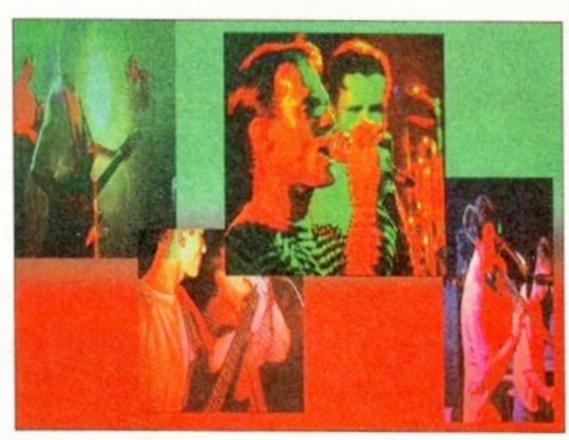
> clicking on Undo, no more cursing after you accidentally remove some important detail. It can be very difficult to remove artists from an Image Engine once they have access to such a simple way of removing mistakes.

Although it takes minutes to get acquainted, it takes a week or so to get really comfortable with the system. You start off by thinking, "Hmm, what should I

try?" After a while you know when an image needs a little blue removed or why something won't quite fit.

C'mon, Pat, there must be something missing. Well, Imagica can't do anything with perspective it's strictly flat-earth territory. But it can rescale and reshape brushes up or down in size very well indeed. And... no, I really can't think of anything else that's missing.

However, this is not a paint program. It's a tool for professional graphics artists. Okay, any Amiga owner can start to get into 24-bit. Nowadays, there's a fair range of 24bit IFF compatible software, for producing top quality graphics on the Amiga. Not just the expensive stuff like ADPro and Morph Plus - more and more cheaper stuff (and even shareware like Digital Illusions and Rend24) give some access to



This is exactly the sort of thing that Image Engine does best - montage graphics into one picture.

professional video quality graphics.

The trouble is that you still have to pay for a 24-bit display to actually see the things. A cheap one like Opalvision costs about £600. A Harlequin with an S-VHS VLab is more like £1,500. The Image Engine's digitiser, frankly, blows that out of the water - it's every bit as good as the full Harlequin's. With Imagica for free, you'd be a bit silly to buy them separately. Or else you really do need a fully compatible Harlequin card and are prepared to pay the difference. (AS)





Quality

You want the best, you got it.

Documentation

Deliberately sparse - but mostly unnecessary, thanks to the straightforward nature of the product.

Ease of Use

You learn by experimenting with it.

Performance

Will get better as more functions are executed using the graphics processor.

Value for Money

Quality like this costs a full set of limbs.

Overall rating

The best there is - and the price reflects it.

A grand grabber

Rombo's new Vidi-Amiga-12 AGA enables you to grab images from any video source, in AGA modes if your Amiga can handle it. Steve McGill plugs in...

he popular Vidi-Amiga not only offered high-quality grabs, it was cheap (£100) and easy to use – just plug it into your Amiga, boot up the supplied software and connect to a video source – camera, VCR, laserdisc, whatever it was.

The unit plugged directly into the parallel port, the only problem being that the awkward shape blocked off the serial port. Unless you never used the serial port, the constant unplugging of the Vidi unit was tiresome and caused unnecessary wear. Unfortunately, the problem hasn't been redressed with the Vidi-Amiga-12. Rombo offer to sell you a connector to end this inconvenience, so why couldn't they either box the unit in a thinner case or supply it with a ready-fitted ribbon?

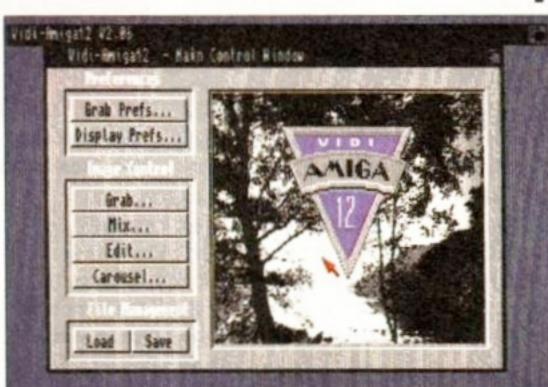
That apart, the Vidi-Amiga-12 AGA is a step forward. The software



This image was grabbed from an S-VHS camcorder and saved in interlace format, all in Vidi-Amiga-12 AGA...

interface is much friendlier and more logically laid out than the software of old. The grab preferences and display preferences sections enable you to define the various resolutions and types of grabs you want to take – colour, mono, red, green, or blue. The grabbing panel is easy to use – brightness, contrast and saturation settings are software-controlled – and the Mix control panel offers a plethora of manipulative delights.

Reading the advertising blurb, you could be forgiven for thinking that the unit will grab frames in any resolution – it says Overscan/Hi-Res, HAM-8 and numerous other grab types are available. But the unit can only grab 16 grey scale shades live or 4,096 colours (HAM) at a maximum resolution of 320 x 512 (Lo-res interlace) in less than a second. The clever part of the Mix panel is that it enables the grabs you



Vidi-Amiga-12 AGA's main control screen is much friendlier and more logical than the earlier version's.

have taken be remixed and displayed in a multitude of different resolutions and numbers of colours.

Sequences of frames are now saved as Anim files – great for rotoscoped animations. The mixer can turn a full-colour grab into a 256-colour or 256-greyscale image

(provided that you have an AGA machine, that is), which can be saved in various formats that can be read in by other machines -24-bit IFF, BMP (24bit PC format), 12-bit and TIF. Art Department Professional offers more out-and-out power, but this conversion ability is nothing short of

fabulous, though you need an AGA machine for 256-colour and mono conversions, Hi-res interlace HAM and HAM-8 display, among others.

Image-processing is also catered for. It doesn't offer the range of options that say *Pixmate* and *ADPro* are capable of, but you can batch



The same image, in VHS and low-res, demonstrating the broad range of the Vidi-Amiga-12's capabilities.

process Carousel selected images, and there are Edge Detect, Threshold. Negative, Light and Dark options. The ability to tweak the parameters of these options would have been a nice touch. but you can't have everything. The software will multitask but does not have an ARexx interface - a shame.

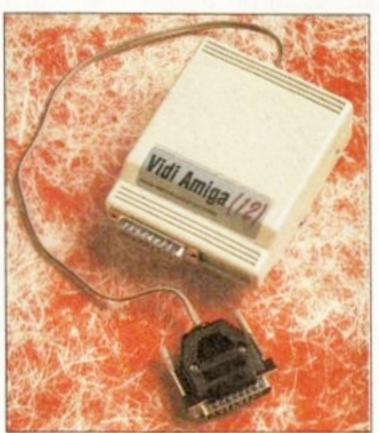
So how well does the unit perform? To put it through its paces, we connected it to a Panasonic MS95B Super-VHS camcorder. The Vidi unit has an S-connector, which means that it can process the higher bandwidth signal that this type of camcorder outputs.

Image quality was impressive. The real test with a unit like this is how well it will reproduce skin tones, and the results were admirable they looked natural and lifelike. There is a marked drop in image quality between Super-VHS and standard VHS. The old adage of "garbage in equals garbage out" holds true. Nevertheless, although the S-VHS grabs were the show stealers, the VHS grabs held their own. Degradation does occur when grabbing from moving tape, but this isn't due to the Vidi unit, it's an inbuilt problem with the medium of videotape. Again though, the S-VHS tape grabs were markedly superior to the standard VHS grabs.

There are some nice little touches in the manual explaining the basics of good grabs; VCRs on Pause are not a good idea for colour grabs. Lighting is probably the single

most important consideration for agreeable results.

All in all, the
Vidi-Amiga-12 is a
quantum leap up the
evolutionary ladder
of affordable home
frame-grabbing. It
could be considered
a foundation product
– that is, you can
build an excellent
digitising system
round it and it will
grow with you. From



Just plug in the Vidi-Amiga-12 AGA and you can grab grandly...

the humble Workbench 1.3 A500 to the mighty A4000, the Vidi performs faultlessly. Whether you're a desktop animator, desktop videographer, desktop publisher or desktop graphic designer, the Vidi-12 has something to offer you. It has to be one of the most exciting creativity-enhancing tools currently available for the digital desktop artist.

SHOPPING LIST

Vidi-Amiga-12 AGA.....£99.95
From: Rombo Productions,
2 Baird Road, Kirkton
Campus, Livingston,
Scotland EH54 7AZ.

= 0506 414631

CHECKOUT VIDI-AMIGA-12 AGA

Features

In such an inexpensive unit, the inclusion of an S-Connector, image

inclusion of an S-Connector, image processing and multi-tasking software is nothing short of excellent.

Documentation

Much better than efforts of old from Rombo – less arrogant, more informative, with useful tutorial and glossary sections.

Ease of Use

It's plug in and go really. Best to familiarise yourself with the software.

Value for Money

Nothing comes close to offering so much for so little. Would be perfect if a

parallel ribbon cable were provided.

Overall rating

Unless you intend working with 24-bit colour, the Vidi-Amiga-12 will be with you for years.

Another great offer from a manufacturer you can trust





*Price includes VAT and delivery

- High quality
 - Renowned and proven reliability
 - Styled plastic case
 - Low power consumption
 - Throughport facility for addition of further drives
 - Suits any Amiga

Order with Confidence

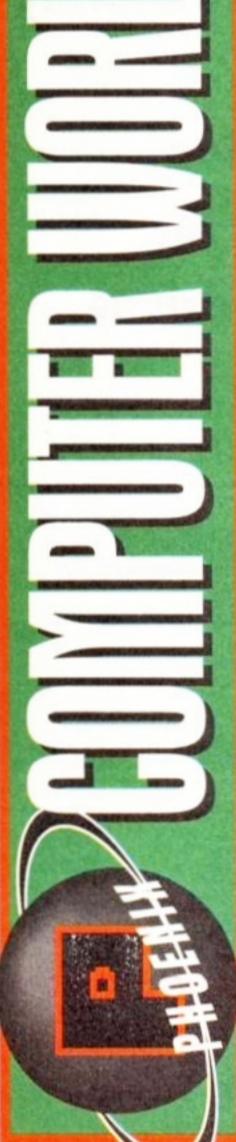
- All Cumana products carry our 30 day money back guarantee
- All products carry our 12 month warranty
- All inclusive price

Cumana reserve the right to increase the price at any time. This offer is subject to availability.

NAME	ADDRESS	
POSTCODE	TELEPHONE NO.	
I would like to order	CAX354 Disk Drive(s) at £49.95 each	
Please debit my ACCES	S/VISA card (please delete);	
Number	Expiry date of card	_/
Signature		
Cheques should be me	ade payable to Cumana Limited. d by telephone – 0483 503121, or by fax –	VISA
i 0483 451371, or ser	to – Cumana CAX 354 Offer, Broad Street, Guildford, Surrey GU3 3BH.	
L		



Manufacturers of quality products since 1979



=

-

M SERVIC All prices DUALI COMPUTER WORLD-WORKING TOWARDS BRITISH STANDARD BS 5750 FOR SAME DAY DESPATCH* ž FAST



CITIZEN

HEWLETT PACKARD

Panasonic





SONY OGITECH 9

RANGE

CITIZEN

Base Pack

sed on the A1299 with opti-bard drive. Race 'n' Chase-ked by an official 12 mos-

HEWLETT PACKARD

Commodore

SPECIALISTS



COMPUTER WORLD PROVIDING YOU WITH TH HESE PACKS ARE OFFICIAL DESKTOP YNAMITE PACKS with built-is hard drives and backed by an official full 1 ICL PACK INCLUDES: A1200 .

Wordworth V2.2 (AGA) Amiga Format Gold - Deluxe Paint 4 (AGA) Oscar · DENNIS (AGA) · and

When buying any AMIGA add £29.99 Chaos Pack! get the...

INCLUDES:
The Chaos Engine
Nick Faldo's
Championship Golf
Pinball Fantasies RRP £125.99

Only

127M 100 A 600 THE WILD. THE WEIRD & THE WICKED Software littes: Deluxe Paint III • Fermula One Grand Prix • Putty • Pushover. Nigel Mansell & Trolls! £194.99 ALL PACKS INCLUDE:

209M

85M

B

MONITORS

MET E404.99

For AMISA 500/1560/2000. Upgrade your Amiga to 2 Mb of chip RAM. Supplied with everything you seed including 2Mb 8375 Agaus chip. Easy to fit, no soldering, internal fitting, still allows A500 trapdoor expansion to work. Fully compatible with all known software

AL POWER DEALER

Eghly rated market lead

the fastest Hard Drive/Controller for the Amiga. Features Game Switch, Modern SCSI port, FAMASTROM SCSI Driver, GVP's custom

HARD DRIVES

OVERDRIVE 35

External hard disk that plugs into the PCMCIA slot, coloured and styled to match the A1200.

he worlds first 32-Bit CD games sys-im has been released - sending shock aves through the industry!! Based on the 820 Processor and sharing the same chip sat as Commodore's agshig, the A1200, it leaks set to be a major force in the home orpating servicionent.

AMIGA GD32

Digitas's print manager.

(ABA)

VLSI chip and internal RAM expansion up to 8 meg! Using high spec fast-access GUANTUM Hard Drives with 2 yr. guarantee.

IT WON'T invalidate your warranty.

IT WILL give you up to 540Mb of storage and run at twice the transfer rate of the internal interface.

All drives feature super sim design, enable-disable switch, thru port and come with a 1 year replacement guarantee:

Computer World Deluxe Drive Power-high density disk drive

DISK DRIVES

£54.9 £99.9 £59.9

Autoscan 2038. CVATZ E1099.99
28 8.31 Det Pitch, CRI 15-38/Dz with digital memory sizing, beth suitable for the Amiga in all screen modes!!! MENU £839.99

£144.99

COMPUTER WORLD PRICE

ed top selling British-made bearts are to be saders, already renswowned for premium odects. Gold Award Amiga Format. It state. Optional little fast FPU (50M/s). d clock. Optional FPU disable switch M Technology allows use of 1, 2, 4 and 8Mh fine last FPU (50M/s). Jeru want state. Itse power. Optional FPU communications.

FEATURES: Jers was

EATURES: SIM

expansion part

Cumana CAX 354 External... Burable very high quality disk drive. Disk head cleaner...

COMMODORE 1942 14" Monitor £379.99
ideal for A1200/4000 - A64 - 28mm Bet Fitch - Tilt is swirel
stand - Built-in Stens Speakers - Works with All Amigus in most
resolutions - 1 yrs on-side warranty.
COMMODORE 1940 14" Monitor £289.99 Proscan 1782... CT373 E839.99 17 E27 Det Pitch, CRT 38-82Khz with digital memory sizing Only for high and systems with 30Khz signal requirements!

We inc. clock £29.99 1/2 Mb without clock £19.99

A 500 +
Espand year RAM to 2 Mb exing the trapdoor ex,
All banets carry a 2 pr replacement guarantee.
COMPUTER WORLD PRICE.
A 500

Real time battery backed clock • Low pen fisable switch • Easy to fit • PCMCIA friendly

A500-HD8 + 42 Mb ... CERTERY

£26.99

I call games... area £17.99

Now that's what I call games.

F79.99

kbesch, Plays audio

FEATURES INCLUDE: At size factoriar, 2Nh 32-bit graphics, 1288 flach memory (storing scores), Includes Biggers & Oscar, built-in workh CD's, 77 tides anticipated before Christinas '33 James Pond-RoboCod......including 7 CD stondtracks and a 6 minute introduce

500/500+

A500-HD8 + 80 Mb

A500-H08 + 120 Mb ... CERTER

A500-HD8 controller only

1500/2000

Buy any Overdrive 35 and get Civilisation (AGA) for just £16.00

A570 CD-ROM Fred Fish Disks STITL OFILY CREAT WALVE, an ideal addition to any P. 900 90

Pandora's CO - Over 500 Mb of Sound, On Art and Animation on one feature packed CO!

A500-HD8 + 213 Mb

JOYSTICKS

switched unless stated.

Fight Gripstick

Jet Fighter.

Apache

Joysticks

F

PHILIPS "155A" Monitor... £199.99

Due to the unavailability of the 8833 Mk II this christman, Computer World have sourced what we believe to be an arrestlent alternative. The 155A offers superbill, specification and outstanding value for money. Specification as above, but with a 39mm det pitch COMMODORE 1084-SD 14"Col. Momitor.

Cheetah Bug... Top Star Stick.

1. Kigh definition FSI Tube offering same superb picture guality as TV-Mention 2. Scart connection as standard 3. Fully remote control 4. Eastest Teletest 5. Composite video and direct audio inputs 6. Free Scart lead as standard 7.

SPECTACULAR AGA UPGRADE

upgrade, or want your AGA system to run

EGS SPECTRUM GRAPHICS BOARD

PA 6040 4 Mb PCMCIA card 6020 2 Mb PCMCIA card

PC 0Mb/cs No. 68827 FP C 0Mb/cs No. 68882 FP PC 1208 2Mb/cs No. 688 PC 1208 2Mb/cs No. 688 PC 1208 4Mb/cs No. 688 PC 1208 8Mb/cs No. 688 PC 1208 PC 12

Series II Hard Disk Controller, RAM card... Series II 42 Mb Hard Disk and RAM card...

Series II 89 Mb Hard Disk and RAM card. Series II 128 Mb Hard Disk and RAM card.

Series II 213 Mb Hard Disk and RAM card.

The 4000-030's & 040's are powerful, packed with features and represent a excellent value.

A1200-HD UPGRADE PACKS

AMIGA 4000

SPECIFICATION CHART

FOR 4000-030 VE CHIP RAM FAST RAM

HARD DRIVE

30Mb

ulated-0Mb

601-populated-1Mb

Analogue Freewheel.
Analogue Joystick adaptor...
Speedking Analogue.
Gravis Switch Joystick.

Intruder 1 (Flight Sims)

Gravis game pad

PHILIPS 8833Mk II £199.99
Illimited stocks buy new for Christmass Cal. Stores Weather the cable 5 1 yes on-site warranty.
MONITOR ACCESSORIES14" dust cyrs. £4.99 14" tilt 6 swivel stnd. £13.99 AGA system to run quicker and faster than AGA - due to on board Bliter chip

Anti-glare filter screen. A4 copy holder......

Runs under EGS Library system for high percentage softwarecompatability, offers resoloutions up to 1600x1280 and comes with

then this card is for you!

FOR PC1208

SIMMS WIVE BE

SERIES II ACCELERATOR

NO.

NEW FROM EGYP, NEW FROM

WITH EXTRA MEMORY - £49.99 PER Mb **BOOST YOUR AMIGA'S PERFORMANCE**

2 Mb SIMM F9 8 Mb SIMM F3

1 Mb SIMM. 4 Mb SIMM. 1 Mb

GUP A1200

GVP A1230 ACCELERATOR
THIS TOP SELLING 40 Mhz 68030ec-accelerator
chip with an optional 40MHz fpu (68882) and
memory configurations of up to 32 Mb.

quality EGS Paint system. The system requires a zorro IVIII machine, auto sensing allows it to run quicker on a Zorro III and Amiga Dos

£13.99

hargable battery

clock

CW A1200 real-time

prep disk

CW A1200 600 HD Control Centre (he F

AGGESSORIES

A1200

Runs at 50Mhz, handles up to 32 Mb of 60ns RAM, optional 50Mhz fpu, has a battery backed clock, has a new feature connector allowing easy addition of warrnty safe upgrades, (the first upgrade will be a SCSI controller) is also a 16-bit sound sampler, with direct to hard disk recording and video

SPECIFICATION CHART FOR 4000-040
HARD DRIVE CHIP RAM FAST RAM PRICE

All 2.5" IDE Hard disks offer ultra fast access time and are supplied from leading manufacturers such as Western Digital/Seagate. Pack also includes cable screws and software. I year warranty on all models!! 30Mb£99.99 60Mb£169.99

A1200 - PCMCIA FAST RAM EXPANSION 2Mb F114.99 4Mb F169.99

120Mb pack ... £20

340Mb 540Mb 214Mb

M2517

2.0 or above.

MENT

Quickjoy Turbo.
Quickjoy Pro Pad.
Cruiser Black (dual lead).
Cruiser Multi-coloured (dual lead)... Zipstick Pro Autofire (top selling) Konix Speedking Digital Beetle Mouse (for kids) great dpi. Foot Pedal Comp Pro Star Mini 5000. Pro Mini 5000. Comp Pro 5000. BUG (Green)

Mb, no fpu Mb, no fpu Mb, no fpu Mb, 68882 68882 68882

£339.99 £389.99 EGS Spectrum 1Mb A
EGS Spectrum 2Mb A adaptor cable Dust Covers Multi-Sync Monitor A1230 II 50 Mhz 8Mb RAM ... A1230 II 50 Mhz 4Mb RAM ... A1230 II SCSI module 340Mb 2Mb 4Mb...£2322.99
525Mb 2Mb 4Mb...£2322.99
All come 24hr response on-site maintenance guarantee from ICL one of the UK's Largest computer repair contractors

AND'S BEST AMIGA SUPER STOR PROBABLY THE NORTH OF ENGL

PRINTERS

INPUTER WORLD PRINTER PACK-in std. grinter cable. 2) 250 sheets of Top quality 3) <u>Authorized</u> Amiga Oriver disk. 4) Text Engine mission, great word processer. 5) Business Letters.

SUGIL Ask telesales about

COMPUTER WORLD ARE A

CITIZEN

LC-24-20 II Mono (24 PM) E LC24-30 Colour (24 PIN)... LC24-100 Mono (24 PIN). LC-100 Colour (9 PIN). SWIFT 90 COLOUR - 9 PIN Colour printer is fast quiec, has additional fouts and comes complete with a 2 year sarcant and V20 driver disk!

Swift 240 Colour Caster F239 99

Swift 200 Colour Caster F239 99

Swift 200 Mono.

Swift 200 Mono.

É79 99

Citizen Auto sheet feeder.

É79 99

LC24-300 Colour (24 PIR).

XB24-200 Colour.

SJ48 Bubblejet.

MAJOR DEALER . MAJOR DEALER BUBBLE JET

anon Canon

LS-5 Laser Dual Bin, 0-5 Mb GREAT VALUE

LS-Sex Laser. as above with 1Mb 600x300 dpi.

LS-5TT Laser ... shove with 2Mb

Fast print times, more fonts, 95%

Aginga Gold, inc. BJ105x Briver Disk.

FREE I-SHIRI while stocks last.

CANON BJC 600 (Calour) 350 dpi
New print centrol for non banding
selids - Fast dry laks that den't blur or mix - Online Black
ink for true black on same page - Prints on plain gaper, 8HP
film special pagers and eavelopes - Epton/18M emulation
+ Cannon advanced drivers - Built in 100 skeet autsleeder

- Auts cleaning function.

CANON BJ 200 95% Amiga Gold... F309.99
Feature include: 380 dpi. - Min 89 page Auto sheet feeder pages

** £369.99 CANON BJ 230

Wide carriage version of 8J200
CANON BJ 300
E0 column bubblejet provides laser quality output.

High Quality 8mm mouse Mats. F3.99 99 Auto Mouse/Joystick Switch. F15.99 0on't damage your Aniga's ports! This device saves wear and tear makes switchover FAST.

SCANNERS

Powerful image processing tools for the office or the home environment. POWER-Features include: 100-400 dpi - 64-

£149.99 Grayscales Thruport to printer • Free Editing software.

Power Scanner v3.0 N.B. Existing v3.8 owmers can upgrade to OCR for. Power Scanner v3.0+0CR. Power Scanner Colour..... Power Scanner v3.0 includes free opgraded editing s GOLDEN IMAGE.

BUY NOW TO AVOID DISSAPOINTMENT!

Most Star Printers now have great price reductions in time for christmas!

In Features: Scan and Save • Migraph Jnr. OCR • 400 dpi • 256-Grayscale • Not A1209/4000 Alfascan

CW PRICE

£169.99

DISHS

£899.99

Don't confuse these quality disks with others currently available. 3.5" 100% certified error free 70% clip. All disks include FREE high quality CW labels.

Now back in stock! TDK branded 3.5" DS DD 750. £4.99 £12.99 £22.99 £39.99

£52.99 £249.99 100 media from the experts!

diskettes boxed in 10's with labels. Top quality

£9.99 1000 Computer World Disk Labels.

ACCESSORIES

SJ 144 cartridges pack of 3. £36.99
PRINTER ACCESSORIES
We have a large range of high quality printer accessaries for all the printers we sell including dust covers from £2.99
Ink cartridges from £13.99 • Mone ribbons from £3.50
• Celour ribbons from £7.99 • Printer stands from £7.99

17.99 4 way. £19.99 £37.99 Action replay cartridge for A500/500+_£54 Hi-Fi Stereo Speakers (new style).....£39. Spectrum Emulator (on 2 disks with 8 games)_£2. Connecting Cable for the above. DATA SWITCHES- (25 pin D type) Amiga power supply unit. Premier Control Centre. For the A600 A500 and A500 + 2 way.. £15.99 3 way.. CW Stereo Speakers. Dust Cover A1200.

F12.99

MIGE & TRACKBALLS

anting device

Optical Mouse, High precision

Infrared-Cordless-Mouse

Crystal Trackball

(Rechargeable tap zeilisty innovati Optical Pen Mouse...

Mega Mouse 2 400 dpi Direct replacement for Maye Meuse 1)

GOLDEN IMAGE

SED RESELLER U.S. R

VEAR The No 1 name in fax modems, US Robotics pride themselves on high quality modems at an affordable price. They come backed with a 5 year warranty and are fully BABT approved.

compression. It has to reach 57600 bps.

SPORTSTER 2496 + FAX.....£149.9 As above with cable opticomms 2 software. £149 WHY IS SPEED SO IMPORTANT?

93 MINS £1.76 uiculated at 5.6 pence per u (peak rate long distance) VISS 2Mb FILE TRANSFER YOU GO THE LESS IT COSTS! 13.07 MINS £2.56 1422 MINS £26.54 THE FASTER 281.1 MINS E53.08 露

V.E. SRRips +V.Chin Sets Conse

Art Department Professional Scanner Software Compatible with GT 6500, GT 80000, 6000 and E5300C, E5600C, E5800C For automated 0.C.R. ir warranty, cable & software.

16.8 + Fax £509.9

Is warranty, cable & software. V32 bis+fax... As above with 5 year warranty, cable & software... £399. Courier HST 16.8... As above with 5 year Courier HST Dual 1 As above with 5 year

S & CABLES LEADS

Printer 2.0m HO. E.7. Joystick long ext. Amiga-8833MkII. Modulator ext... Amiga-Scart... Mouse/Joystick splitter SCSI Cable various Mouse/Joystick ext Serial/Modem cab Amiga-Microvitec. Amiga-CPC monito Disk Drive ext... E Amiga-Multisync. Widi-Midi 2m... Amiga-RGB/TV. Midi-Midi 3m. Midi-Midi Sm.

BOOKS

Printer 1.8m.

Dust Cover A600

Ξ

POST TO:

8

PHOENIX COMPUTER WORLD UNIT 2, YORK TOWERS, 383 YORK ROAD, LEEDS LS9 6TA.

We stock the best range of Bruce Smith books Mastering Amiga DOS Vol 1.....£2 Mastering Amiga DOS2 Vol 2....£1 Mastering Amiga Printers.

Mastering Amiga Assembler...

Mastering Amiga AMOS.

Mastering Amiga AMOS. astering Amiga Beginners Mastering Amiga DOS3 Mastering Amiga W.B. 2... A600 Insiders Guide... Mastering Amiga C

Arena Accounts. System Computer world are a major stockist of romb multi-media products for the Amiga and P.C. assured that we offer extensive technical backup on all Rombe products and that the majority are on demo in our shownow. Vidi Amiga 12 RT (AGA suprt)

Real-time celour capture from any video source
Vidi Amiga 24 RT (AGA suprt)

24-Bit Real-time colour capture from any video source for Vidi Amiga 12 (AGA version)... Vidi Amiga 12 (Std version)... Rendale Genlock 8802 FMC.

e with all Amigas. Hi band 6 connector cable, RGB colour uput fader control (video HAMA Genlock 292
(10 MR; bandwidth) Compatible with all Aming composite video. Separate RSB connector cabinopy/special Aminga signal. Output fader co only/special Aminga 3000 switch. **GVP Genlock.**

Roctech PIP View (picture in picture unit). Rockey Chromakey Rocgen Plus Rocgen VGA

EPSON FLAT BEDS

Epson scanners offer the ultimate in flexibility, technical specification and value for money. For more information call 8537, 350891 and ask for the property.

Epson GT transparency adaptor **EPSON GT 6500 IM** Epson 67 6500 SCSI.. *a* Epson GT document feeder. Epson GT 8000....

AMIGA MUSIC

It really does teach you how to play!!!
Full size keyboard with built in MIDI interface • 100
onboard sounds with effects • ability to customise
lessons by use of artificially intelligent software!! £29.99 F36.99 £24.99 is very flexible. It **GVP Digital Sound Studio**+ professional quality midi interface has four ports 2 in, 2 out, (inc. FREE **GVP Digital Sound Studio.** Technosound-turbo 2. Technosound-turbo 1 Pro-Midi 2 Interface.

Superbase Professional
Mailshot Plus.
Superbase 2 Alternative 3D Textures. Personal Paint Pixel 30 Pro. ake 2

Plus Personal Finance Manager Home Accounts 2. System 3E Cashbook Combo... Day by Day.

extensive DIP functions inc

Pro-Page 2.1/Pro-Draw 1.2 bundle. Kindwords.

CESSING &

Final Writer (AGA)...

CCCUNTING

SOFTWARE

Pagestream v2 22.
Pagestream v3 Full UK version.
Page stream Business Forms.
Page setter 3.
Professional Page v4.
Soft Clips. £38 SLIDESHO Dist. 0 8 ENTATION PREA Deluxe Video 3 Maxiplan V4 Scala

he Publisher Turbo Print Professional

PRBC IMAGE Scenery Animator 4
Make path for Vista
Art Department Pro 2
Art Dept Pro Conv Kit.
Deluxe Paint 4 AGA. Scala Professional

Wordworth V2 (AGA)

Final Copy Release 2.2

Pen Pal 1.5 deal for single disk system!

Deluxe Music Construction v2.0. KCS Level 11 v3.5
Bars and Pipes Pro V2
Kits for Bars and Pipes.
Super Jam v1.1
The Patchmeister. £46.99 Mini Office. £39.99 Gold Disk Office 2. Imagemaster... Morph Plus... Pro Vista v3....

One Stop Music shop.

AMAS 2
Clarity 16 (16 bit sampler).

Guartet. £39.99 Stereo Master. Videomaster Megamix Master Techno Sound Turbo 2... The Music Librarian friple Play Plus... SyncPro... Blitz Basic (Full UK Version) SER F34.99 Amos Compiler Amos Professional Amos Professional Compiler... Cygnus Ed Pro 2
Hisoft Basic.
Hisoft Extend.
Hisoft Dev Pac.
Hisoft Pascal.
Lattice C v6 + New Version. Easy Amos.

Anim Fonts (Vol 1,2,3 or 4). Kara Fits (Hdlines 1,2 or 3,subhds). VideoFits: (Seri1)/SansSerif 1/2/Decrtve) lypesmith.

Now in Stock!

LEISUR

GAMI

Amiback Tools Amiback <u>£42.99</u> Amiback Tool Cross Dos v5 (inc. PC emulator). Gigamem.
Hotlinks Editions
Quarterback Tools Deluxe.
Quarterback v5.
Quarterback Tools.
X-Copy Professional.

Big Alternative Scroller 2
Big Alternative Scroller 2
Broadcast Titler 2
Broadcast Titler 2
Broadcast Titler 2
Font Pack 1 for BT2
Pro Video Post
Scala 500
Scala Professional

Cine Morph. HIMATION Brilliance (Sold Award Amiga Format)... Calgari 24 (Special Purchase) Calgari 24 (Special Purd Calgari Broadcast Deluxe Paint 4 AGA Morph Plus £159.99 C Real 30 Classic

Sleepwalker-comic Refief
Indy Jones & Fate of Atlantis
Legends of Valour
Wing Commander
Sportsmasters (A1200 compatible)
Inc PA low Gol - European Companible Secon - Indy 500 - About RAYER

The Lost Viking
The Ancient Art of War in the Skies.
Goal by Virgin New by dino Dini
Beavers Grandslam.

DESIGNED AND PRODUCED BY WHITE MOUNTAIN 0532-390880

For Customers not able to visit our Showroom we offer one of the fastest and most complete mail order services available.

STANDARD DELIVERY (4-5 days) FREE Next day delivery only £6.00 • 2-3 day delivery £5.00

SJ-144

A stuaning new thermal printer from Star. Full 350 x 360 dpi, in both mono and colour. 3 ppm in mono, 1.4 ppm in colour. Can print up to 680cps. CPS Sheet feeder as standard, wirtually partable printers, small hostprint. Zoom mode to offer easy printing in A4 A5 and A5 sizes. NOW ON DEMID IN-STORE!

SJ-144 CARTRIDGES Pack of 3 Mono.....

STAR AUTO SHEET FEEDERS

Pack of 3 Colour

9 [C24-20

C24-200.

your Credit Card No Quoting MSM

TO ORDER BY 0532 350











Please make cheques payable to Phoenix. Allow 5 working days for cheque clearance.
'Same-Day Despatch on Credit Card Orders/ bankers draft/ building society cheque/Postal orders.

CUSTOMER CARE AND GENERAL ENQUIRIES (0532)350652 FAX: (0532)350702

LEEDS City Cent

A1200 Insiders Guide

Road Rash Gunship 2000 Swing Value Abandoned Places Abandoned Places American Gladiators... F-17 Challenge Graham Gooch Cricke F-19 Stealth Fighter... Operation Stealth Tank Platoon Blows ... occer Kid une2

remier Manager ick Faldo's Championship Golf istoryline 1914-1918 Superfrog
Lemmings 2
Desert Strike
Sensible soccer
Chuck Rock 2
Street fighter 2
B17 Flying Fortress Street fighter 2
B17 Flying Fortress
Zool
Humans
Abandoned Places
Premier Manager

Very special FX

Jeff Walker samples the latest version of a classic image-processing program, ImageFX.

ave you ever spent a couple of hundred quid on some software and, after playing with it for a while, felt that you hadn't got much for your money? No danger of that with ImageFX. The software is packed on to four disks, one of which is full of example pictures and animations; the manuals are a good inch and a half thick in all, compete with a hard manual house for your shelf.

But a thick manual and highquality packaging do not a program make. The question is how well it works. Although ImageFX can be run programs - but it works, it's fast, and it doesn't cost a penny extra.

The load and save modules too all come bundled with the package. Amiga file formats aside, JPEG, TIFF, Targa, BMP, PCX and lots more are there, plus FLC animation files, the standard used by the popular AutoDesk Animator Pro on the PC.

A large number of rendering formats are supported. All the Amiga formats are there of course, plus there are modules that enable you to view your work on a number of popular graphics boards including DCTV, any EGS board, Firecracker24,

HAM-E, IV-24, SAGE, OpalVision and Retina. (Picasso II comes with an ImageFX render module.) And then there's Cinemorph. Morphing is one the most fascinating and absorbing pastimes I know. It's painstaking work and it takes time to get it right, but when you do get it right there's no better effect.

Now, it's worth pointing out that to get all the above facilities with a certain well-known rival imageprocessing package,

it would cost you about £400-£500 all told, perhaps a bit more. And even then you don't get the facility to paint or work on small areas of an image, nor well over 100 other image-processing features that are packed into ImageFX. The scope of the system is mind-boggling. GVP say that if you can imagine it, ImageFX

can make it come to life. That's not quite true, because it is you that has to make it come to life ImageFX is merely the tool you use. You shouldn't rush into buying it: there is an awful lot to learn. At first you are bound to feel swamped by the infinite possibilities, and it is going to

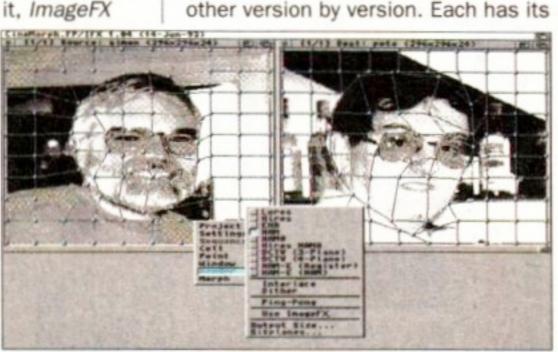
take some months to become comfortable with the software. Luckily ImageFX has a brilliantly intuitive user interface, which makes the process of experimentation painless. You can

even make up your own user interfaces, and it is not particularly difficult to do.

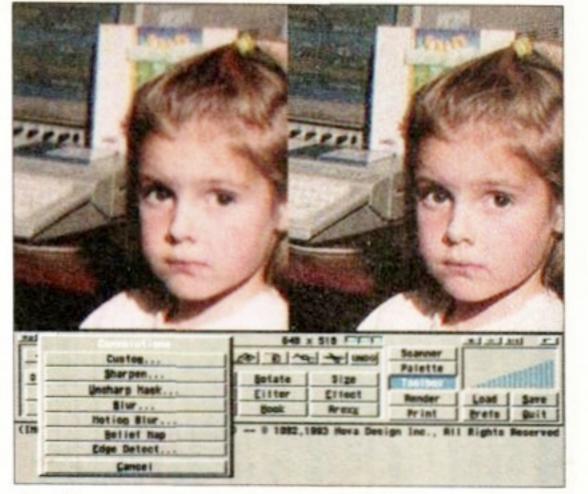
ARexx support is there of course, and indeed quite a few ARexx scripts are provided, particularly for processing animations.

And all this is perhaps one per cent of ImageFX. This is the sort of software that the Amiga was invented for. True, to get the absolute best out of it you need to own a fast Amiga, a 24-bit graphics card and perhaps a scanner or video digitiser, but then it is a fact of life that the more colours an imageprocessing function has to work on, the better will be the results. That's not to say you can't do a lot with 256-colour and HAM-8 images on an A1200 (with at least 6Mb of memory), but it will take longer and even small tweaks will tend to have a great effect because, although ImageFX always works in true-colour fidelity, if the colour isn't there to start with you can't expect more to just appear out of the blue.

There is only one other package on the Amiga that rivals ImageFX, and that is Black Belt Systems' Imagemaster. If you were to ask me to choose between them I'd rather change the subject and suddenly remember a previous engagement because, a bit like the ProPage and PageStream DTP packages, ImageFX and Imagemaster are very closely matched, destined to leapfrog each other version by version. Each has its



ImageFX includes morphing facilities – the hottest effect since effects were invented - via the Cinemorph program, a "hook" that integrates with ImageFX itself.



The Sharpness and Unsharp Mask facilities enable you to bring out the details in a blurred digitised picture.

annoying little bugs, each can do things the other can't. Both are excellent. If you push me I'd have to say that Imagemaster is faster and a little more powerful in some important areas, but ImageFX is much easier to use and a slicker product overall. (AS)



ImageFX£199.95 Upgrade to v1.50£29.95 By GVP and Nova Design Distributed in the UK by: Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup DA14 4DX. **☎** 081-309 1111

CHECKOUT IMAGEFX 1.50

Features

Packed to the gills with processing features - morphing, scanning, animation multi-processor, you name it.

Documentation

Lots of it, but it could do with more on "how to" for beginners.

Ease of Use

Plenty to learn about, but the excellent interface is a pleasure to use and makes learning fun.

Speed

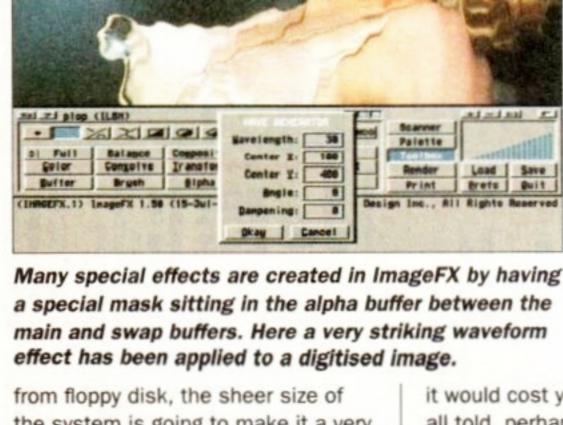
Complex operations are always going to take a while, but ImageFX is no slouch.

Value for Money

Considering what you get, it is a bargain.

Overall rating

Some of the features are a little underpowered, one or two are bugged, but I'm sure GVP and Nova Design will continue to fix and improve.



a special mask sitting in the alpha buffer between the main and swap buffers. Here a very striking waveform

the system is going to make it a very frustrating experience. Really, if you haven't got a hard drive I'd stay away from ImageFX. It will take up more than 3Mb of your hard disk, though installation is painless using the standard Commodore Installer.

As you install it, you soon realise you've got an awful lot of software for your money. For example, six scanning and video digitising modules are provided. The popular Epson GT-6500 flatbed scanner is extremely well supported, as is the Sharp JX-100, the IV-24 and PP&S Framegrabbers, and the wonderful V-Lab. All these devices can be used to pull pictures straight into ImageFX.

There's even a data-caching system that will use hard disk space to store image data when your real memory runs out. It's not real virtual memory - you can't use it to run

Power for art's sake

Steve McGill looks into the new 24-bit graphics board, Village Tronic's Picasso II.

he problem with 24-bit display cards for the Amiga is that often they cost more than half the price of a new A4000/030 - the Retina card for instance sells at around £499. So the Picasso II retargettable graphics board sounds like a great deal at only £300.

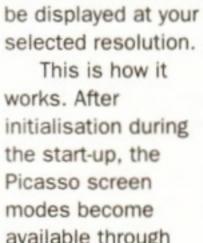
But it's not guite that simple. You need a multisync monitor to use it, and sadly Commodore's 1940 and 1942 are no use - their minimum vertical rate or line frequency isn't high enough for the 800 x 600 resolution, so you need something like the Microvitec monitor reviewed

this is simple too, and copies several files and programs into your hard drive directories. One of the most important of these files is the Village.library. Located in your Sys:Expansion drawer, this is the link between the card and Intuition. This library chooses the correct resolution for your monitor and only lets you use resolutions that are possible. This is probably just as well, considering that the manual is littered with disclaimers accepting no responsibility if you damage your equipment - not very encouraging!

The other important file is the Picasso-Monitor file. This file is an

> expansion on some of the more needed operating system routines. Any legallycoded program's routines are intercepted and can selected resolution.

works. After initialisation during the start-up, the Picasso screen modes become available through the standard



Workbench Screen modes prefs. This lets you choose from the resolutions that are available. Say, for example, that you decide to open ProPage or a similar operating-system-friendly program. Assuming that this is the first time you're doing so since installation of Picasso, the Changescreen program intercepts and offers a choice of screen modes. You can specify whether or not the change should be permanent. If you've chosen permanent, the next

time you load ProPage, Changescreen remembers the specified change and automatically opens your preferred screen mode. The result is that in use Picasso becomes all

but transparent.

This would all be lovely if all programs that you used behaved themselves and went through the operating system before

opening screens and such. Unfortunately, this is not the case. Deluxe Paint for example writes directly to Chip RAM. Normally no problem.

but if you want to use DPaint with Picasso, you could be in trouble.

Luckily, Picasso has a Copy Continuously mode. This copies the contents of Chip RAM directly to Picasso's V-RAM (Video RAM). The downside of this is that your V-RAM and your Chip RAM are in constant use, which limits memory capacity overall. It also results in slow screen

refreshes, with the occasional piece of residual garbage for good measure. Nevertheless, it further enhances the uses to which you can put your Picasso.

It doesn't stop here. There are several module drivers for programs capable of displaying much higher resolutions and numbers of colours.

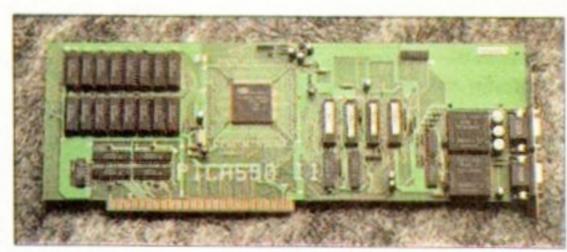
In this particular instance, the drivers supplied are for Art Department Professional and Image FX. Village Tronic are also currently working on Real 3D. With these modules in place, Picasso always tries to display in full 24-bit colour, though 1Mb Picassos are limited to a screen resolution of 640 x 480. Smaller pictures are automatically centred.

Also supplied with Picasso is a copy of Personal Paint lite. While this is easy to use and capable of displaying 256-colour screens, it doesn't use the higher resolutions that the Picasso is capable of displaying, there's no documentation supplied for it, and all the menu



Picasso II graphics board 1Mb £299, 2Mb £329 By: Village Tronic Distributed in the UK by: Blittersoft, Denbigh House, Denbigh Road, Bletchley, Milton Keynes, Bucks. MK1 1YP.

☎ 0908 220196



The Picasso II graphics card: for 24-bit graphics, plug it in and connect RGB output and a multisync monitor.

screens are in German. Just as well it's free, really.

All in all, Picasso can be recommended. It's disconcerting knowing that you can damage your equipment if you set the software up wrongly, but with a bit of care, professionals and amateurs alike will find that Picasso offers a high quality-to-price ratio.



This 256-colour Personal Paint image shows the kind of resolution Picasso II can offer on the right monitor.

CHECKOUT Picasso II

Features

Well constructed board with many uses.

Documentation Friendly and informative. One of the few

manuals where the translation process doesn't get in the way too much. Shame about the lack of documentation for Personal Paint lite.

Ease of Use Could hardly be easier. Only dedicated

technophobes will have any real problems with the board.

Value for Money

Overall rating

Good value for money. Consider though

that you will have to budget for a multisync monitor as well.

A good introduction into the world of 24bit and Hi-res displays.



A special routine can automatically open OS-friendly programs using your pre-set preferred screen mode.

on page 33. Also, the Picasso II needs a Zorro II/III slot, so it's for A1500/2000/3000s and A4000s.

The card is however well made and easy to fit, though to connect its 15-pin output socket to the Amiga's 23-pin RGB port you'll need a 23-way female-to-15-pin-female adaptor. Considering that you aren't going to be able to use the board without one, it should have been supplied.

Unlike the Retina card, the Picasso acts as a pass-through until activated by its software. Installing



With the supplied modules for ADPro and ImageFX, Picasso always tries to display in full 24-bit colour.

Dr Caligari's magic cabinet?

things straight. The new
Caligari 24 can do most of
the things that other 3D
programs do – render, rotate,
transform, and just about animate –
with the notable exceptions of
algorithmic texturing, seeing
exactly where you are placing a
light (the nearest it gets is a view
from any selected light), object
morphing and selectable output
format for full-renders.

On the plus side, Caligari 24 can import objects from Lightwave, Videoscape, Sculpt, Imagine and DXF formats (just as well, since its modelling functions aren't the best I've ever seen, as a look at the demo objects supplied will soon confirm). It also has a nice line in object deformations and produces rather spiffy-looking images (even though it doesn't ray-trace). It can also make animations, using heirarchical object movement if necessary.

But on the minus side: Caligari 24 needs almost 5Mb of hard disk space to install and oodles of memory to run; it has a dongle (another for the collection!); it doesn't render particularly fast (it certainly doesn't live up to its claim of being "the fastest renderer on the market"); and it doesn't multitask.

All of which leaves it looking somewhat crude and dated on the Amiga, compared with programs such as Real 3D 2, Imagine and especially Lightwave, though that is of course only available with NewTek's Video Toaster. All of this is rather sad, considering that Octree pioneered the "all-round" 3D approach on the Amiga (now so acclaimed in Lightwave) and also the use of environment mapping for simulating reflective objects.

Now, many of these gripes aren't particularly serious, because other programs have similar requirements or problems, but surely after five years it's time Octree did something



Possibly the best thing about Caligari 24 is its world view, though implementing hidden-line removal would help to show which objects were behind which.

The new Caligari 24 is being touted as the best, or at any rate the fastest, 3D renderer on the Amiga. Gary Whiteley looks closely at how it shapes up...



Although it can produce stunning images like this, I'm afraid Caligari 24 needs outside help to get around a number of problems. Here I've used objects supplied with Lightwave, and imported a 24-bit background as a .6rn file. Total rendering time: 40 minutes.

about multitasking, which is still one of the Amiga's special features. And while they're at it, implementing a few of the standard Amiga functions (like double-clicking to select files) wouldn't go amiss either.

I mean, what's the use of having a rendering in progress and not being able to do anything else? And, since not multitasking means that it has free run of the Amiga, why does Caligari 24 render relatively slowly and use up so much memory? Surely Caligari 24 doesn't need to take over the Amiga in order to do its "real-time" wireframe tricks – other programs don't.

THE BIG PICTURE

What's more, names can be deceptive, because *Caligari 24* can't save 24-bit images! Depending on the Amiga in use, it *will* save HAM, HAM-8, 16-colour, DCTV, HAM-E or 32-bit (in Octree's own .6rn Rendition format). Mind you, the

HAM and 16-colour images don't look that brilliant and HAM-E is long since defunct.

Now, Rendition format is all very well, but what happens when you want to use a .6m image in another program, or import an IFF image into Caligari 24? Octree don't supply a converter, so it's down to third-party software such as

GVP's ImageFX or ASDG's ADPro (plus the Rendition module from the ProConversion pack). Not a very bright move on Octree's part – especially since 24-bit display devices are becoming increasingly popular on the Amiga.

I also had a problem when using my Opalvision card as a framebuffer (which Caligari 24 supports, along with several other leading display

cards) – it proved impossible to actually save a rendered image, even in .6rn format. I tried, but it never seemed to happen. More often than not I was left locked out, watching an endlessly ticking clock icon and Ittle else. A three finger restart was the only apparent solution. Again, not very bright!

THE VIDEO

Then there's the video – a great example of a poor-quality piece of hype. The examples are admittedly pretty impressive, but there's no demonstration of how they were generated by *Caligari 24* alone, as claimed. The tour of the menus (which makes up a large part of the tape) is both dull and difficult to read, and the impression I was left with was of a promo tape packaged as an educational aid, although somehow it still manages to provide a reasonable, if basic, introduction to the program.

I'm loathe to recommend Caligari 24 over Imagine, Real 3D 2 or Lightwave, for several reasons: its hardware requirements are high, rendering time isn't anything special, its modelling could be improved (although "Deform" is rather nice),

SHOPPING LIST

Caligari 24£99.95

By Octree Software, Inc.
From Amiga Centre Scotland,
Harlequin House,
Walkerburn, Peeblesshire,
Scotland, EH43 6AZ.

© 0896 87583.

there are too many separate (and sometimes incomprehensible) menus, memory usage is verging on the insane and it doesn't multitask. Maybe it's just me, but I really don't find Caligari 24 at all easy to use and it seems to require a lot more input than is returned in output. I'll stick with Imagine 2 for the time being, though having had a glimpse of Lightwave 3 I know which side of the Atlantic I'd rather have an Amiga on at the moment.

Requirements

Caligari 24 needs almost 5Mb of hard disk space for all its installable files; an accelerator isn't obligatory but it would be very helpful and "a lot" of RAM (preferably 32-bit) is recommended – that is, 5Mb to 20Mb should probably suffice (phew!). A framebuffer or 24-bit display card will also be useful if you want top-quality output.

CHECKOUT CALIGARI 24

Features

Caligari 24 does have its fair share of

features, though they aren't always easy to get at, or even make sense of.

Documentation

The manual looks pretty, and helps in many respects, but it seems top-heavy on theory rather than practice. The video has the makings of a fine demo tape, but isn't really much of a tutorial.

Ease of Use

Only rarely straightforward – it's mostly

Only rarely straightforward – it's mostly frustrating and lacks many of the nice touches common in rival 3D software.

Speed

I'd expected much better rendering speeds. Certainly *not* the fastest.

Value for Money

Becantly drapped from £200 to

Recently dropped from £299, the price might just be good enough to attract new buyers, though it will do little to address the program's real problems.

Overall rating

I'm afraid that Caligari 24 really isn't "the sophisticated and affordable tool" it claims to be. Maybe two years ago, but not now. Even at £99.95.

Absolute perfect timing

Amiga Centre Scotland have brought out a Single Frame Controller for taping graphics. Pat McDonald puts it through its paces.

hat would you say to £390 for a cable and a disk? It's a fair slice of cash. but it's a professional Amiga-based solution to what can be a costly problem - recording an exact sequence of Amiga graphics frames of a precise length onto a broadcast videotape at the correct place.

Why not just mix all the graphics into a Deluxe Paint animation and tape it on your home video recorder? Total cost: ten quid. Yes, and it would look like it too. Plus you'd need huge amounts of RAM to store your animation in something you don't need with the SFC.

Mind you, you do need a video

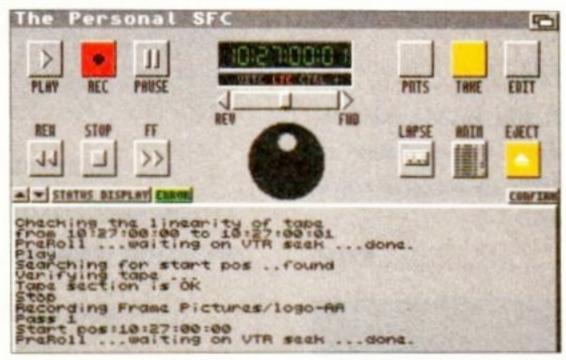
recorder that uses SMPTE time code, has a 9-pin RS-422 control interface, and is accurate down to the last frame. For the purpose of this review we hired a Sony PVW 2850, a snip compared to buying it for £12,500.

Now you're thinking that anyone with access to that sort of equipment has no need for a mere Amiga and

the cable, and comes up with a group of pre-set control settings. Assuming you know what step delay and similar technobabble to feed into the damn thing, you're away. Once past that, you are left with a quite well designed VTR front-end,

showing the VTR type, the current SMPTE tape position, the time code

software reads the type of VTR down



The well-designed but largely superfluous front control panel of the Single Frame Controller. Notice the status messages as the software performs a take.

in use, and features. To be honest it really doesn't give you more information than the display on the VTR, but it does make things convenient. At the bottom of the display you are given reports on the current state of play.

Just click on the anim button to start building your production. First,

> black a tape with timecode if you haven't got a blacked tape - this can be done with the software but again is a standard feature of a singleframe VTR. Next, click on the time code box and enter a start point -

Clear Selected Solect Range String Inch. Load Lint Print List Claim Fist Start Tidra Tratest Di Hariwata Dev Faranciera

Building up an edit list is largely a matter of finding the correct file with a file requester, then saying how many frames of the videotape you want it displayed for.

its AGA graphics. Well, as well as working to all Amiga graphics standards (colour or greyscale), the SFC can drive the Harlequin, IV24, Opalvision, Firecracker, Image 24, DCTV and Video Toaster. (It did not drive the Image Engine properly.)

Setting it up is very easy, but the SFC does expect a hard-drive-based system. With power off, connect your genlocked Amiga graphics signal to the single frame VTR, and plug the cable into the serial port of each machine. Power up, install SFC and any relevant graphics drivers, then double-click on the icon to get going.

The next step is trickier. The

otherwise the software defaults to 00:00:00:00. Next, click on input list, and find some graphics with the file requester.

If the graphic is a single frame, then only one entry will be made on the list. If the graphic is an ANIM-5 or

ANIM-8 sequence of frames, then one line will be added for each frame. Next to each line is the frame count, which defaults to 1 but can be increased to "hold" on a frame.

Once you have a



You have to admit, the front options on the panel to SFC are a little bit much for the video novice.

graphic list, then you can either get it onto tape straight away or preview it. These graphic previews can require a lot of memory - but they are quarter-screen. black-and-white jobs, so you can get a few seconds or so in a 2Mb machine.

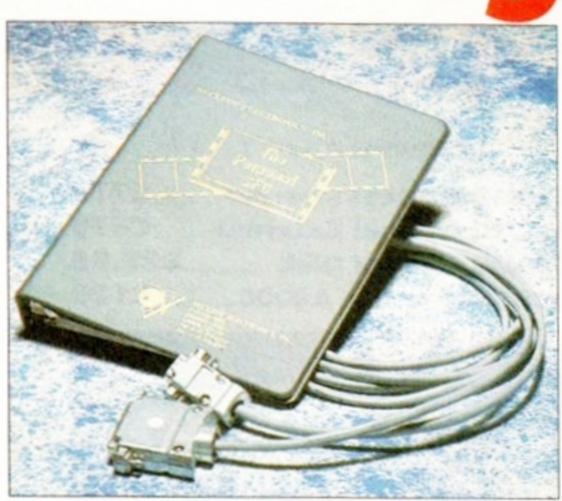
Anyway, once you're happy that the list is correct, you can print it, save it, or set the computer to "go" and watch the automated process. Each frame took about 40 seconds to record, plus about a minute of setting up and finishing off.

If you have a 900-frame segment to produce, it will take about ten hours. A preview would take about 45 minutes to generate, but it would need a lot of memory to generate in one go. All list assembly and previews can be done offline - you don't need a VTR connected until you actually want to record.

That's the good part about SFC. If you haven't got enough RAM to do something, then you can use fewer frames at a step without missing anything out of the final production. The only catch is that it won't touch files that cannot physically fit in RAM if you have a long disk ANIM that won't decompress into memory, you'll have to slice parts of it manually before SFC can handle it.

The SFC is fully ARexx controllable, so you can render frames straight onto videotape if you want - and if you are very sure of what you're doing; but then again if you are working in a studio environment on a day to day basis, it's faster to type your editing commands than to point and click.

All the ARexx commands are covered in the quite excellent manual, which somehow manages to cover everything from the bare bones to a guide to troubleshooting when

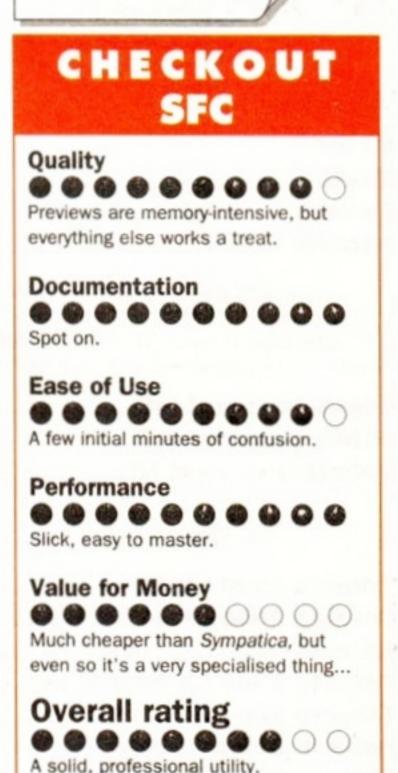


The Single Frame Controller connects a video recorder to your Amiga's serial port, via some built-in circuitry.

you're dealing with certain VTRs. It's quite obvious to me that a lot of time and trouble has gone into making this program as good as it is.

I like this solution a lot, but to be honest there's no way I could justify buying it. If you want to get into the business of transferring Amiga graphics onto professional quality video, then this does it very easily. Takes about 15 minutes to master and then you can arrange your graphics to your heart's content.







poweroptical



128MB	Optical	Internal£779
128MB	Optical	External£879
128MB	Optical	Disk£39.95
SCSI C	ontrolle	A2000 £129



Use a VCR as a backup storage advice, 200 Amiga floppy disks fit on to a 4Hr tape which can be used for an alternative hard disk backup system. What's more you can watch T.V on your 1084s monitor.

£60

flopticaldrive

The Floptical stores 20MB of data on a 3.5" disk (a SCSI interface is required).

Floptical	A2000	Kit	£289
		xternal	

syquestdrive



3.5" Removable HD from Syquest. Each cartridge stores 105MB. Syquest speed is 17ms.

3.5" Syquest SCSI External. £599
3.5" 105MB Cartridge.......£79

scsidrives

We can supply SCSI or IDE 3.5" drives in many sizes.

52QMB	21	69
80MB		
160MB		
200MB		

ideinternal

2.5" Miniature internal HD for the A600/A1200, (these drives come complete with a cable and installation software)

60MB	Internal	HD	£139
80MB	Internal	HD	£179
120M	B Interna	I HD	£229

icdproducts

Trifecta 2000 LX Bare£139
Trifecta 2000 LX 80MB HD£239
Trifecta 2000 LX 160MB HD £329
Trifecta 2000 LX 200MB HD £399
Trifecta 500 LX Bare£195
Trifecta 500 LX 80MB HD£295
Trifecta 500 LX 160MB HD £359
Trifecta 500 LX 200Mb HD £459

a600 memory

1MB RAM with battery backed clock.

A600 Memory£39.95

1.5MBmemory

Fully supports 1MB of chip RAM and compatible with Fatter Agnus. (Requires Kickstart 1.3 and above, not compatible with A500+. Your Amiga needs to be opened, this may effect your warranty)

1.5MB Memory.....£85

1MBtbru'port

Fully supports 1MB of chip RAM and fully compatible with Fatter Agnus. (Requires Kickstart 1.3 and above, not compatible with A500+. Your Amiga needs to be opened, this may effect your warranty)

1MB Thru' port £49



High quality memory card comes with 1MB of RAM on-board to expand your Amiga A500+ to 2MB of Chip RAM. (Fits in the trap-door, does not affect your warranty)

£36

a500memory

4 Chip 512K RAM expansion with or without battery backed clock. Free software included. (A500+ compatible)

A500	Card	with clock	£29
A500	Card	without clock	£24

a5008mbboard

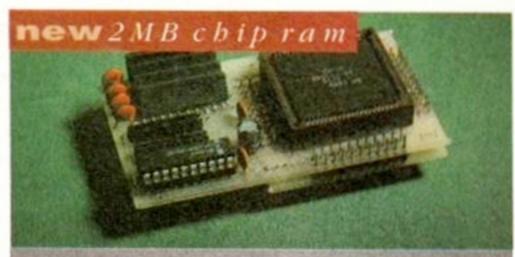
Expand your Amiga from 2MB to 8MB of RAM. Plugs into side slot, full auto config. and full through port.

A500	2MB	Board£139
A500	4MB	Board£219
A500	8MB	Board £299

a20008 m b board

2MB to 8MB expansion for the A2000. Full auto config., IDE interface and 12 months warranty

A2000	2MB	Board£139
A2000	4MB	Board£199
A2000	8MB	Board £289



Increase your Amiga's memory to 2MB of chip RAM, including 2MB 8375 Agnus, easy to fit (internal fitting), unlike every other 2MB chip RAM board currently available you A500 trap memory still works! fully compatible.

£159

specialoffer



PC1208 68882-20MHz OMB RAM board.

PC1208 68882 20MHz £109.95

powerdrives



All Power Computing's disk drives come with a 12 month guarantee. The PC880B is available with Blitz Amiga, Blitz and X-Copy or Cyclone compatible (this drive is only available to registered owners of X-Copy Professional). The drive comes in a choice of two colours, black and cream.

PC880B with Blitz Amiga£60
PC880B with Blitz, X-Copy£75
PC880B with black case (CDTV)£60
PC880E Economy Cyclone Comp£49.95
PC881 Amiga 500 internal drive£40
PC882 Amiga 2000 internal drive£40
PC883 Dual disk drive £125



The award winning external disk drive which includes Anti-click (cures that annoying click), Virus blocker (prevents viruses) and built-in backup hardware. Now available with Cyclone compatible chip.

£60



x-backuppro

Extremely powerful disk back-up utility, uses the latest custom chip design. Hardware designed by Power Computing.

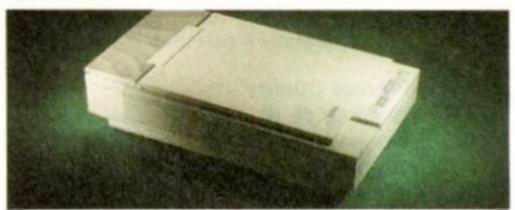
X-Backup Pro£29.95

A600/A1200 Colour Scanner available soon

epson *GT* - 6500



A high resolution 24-bit colour flatbed scanner from Epson. Scan up to A4 in size on this 600DPI scanner. Comes with PowerScan or ASDG (ASDG is an extra £99). GT-8000 scans up to 800DPI.



Epson GT6500	PowerScan£699
Epson GT6500	ASDG£798
Epson GT8000	PowerScan£1199
Epson GT8000	ASDG£1298
Document Fee	der£399



Completely re-designed powerful user interface, produce 256 greyscale images (on a AGA machine), scan in 64 greyscales (non AGA Amiga can only display 16), add colour to greyscale images, special effects, new support for 18-bit scanner, add text to scans, available with mono or colour scanner.

powerscanners



PowerScanner 4 (mono).....£119
PowerScanner 4 (colour)....£239
PowerScanner 4 inc. OCR...£159
PowerScanner 3.....£99
Scanner 4 Upgrade inc. interface.£50
Scanner 4 Upgrade software....£20
OCR Junior Software....£49
OCR Full Version Upgrade...£49
(OCR full version is only available to registered users of OCR Junior)

autorom sharer

ROM	Share	£19.95
ROM	Share	inc. v2.04£50
ROM	Share	inc. v1.3£39
ROM	Share	A600£29
ROM	Share	A600 v1.3 £55

supra modems



Comes complete with English phone cable, RS 232 serial cable, PSU & comms software.

Supra	Fax	Modem+£119
Supra	Fax	Modem 32BIS £229

pc 1208

Power Computings latest 32-bit memory expansion for the Amiga 1200 is now available. The PC1208 uses the latest industry standard 32-bit Simm technology which allows you to use 1MB, 2MB, 4MB and 8MB modules. Simply adding either a PC1208 to your Amiga 1200 will increase its processing speed by 219%, comes with real-time battery backed clock and optional FPU available.

Bare

PC1208	£69.95
PC1208 + 68881 20MHz	
PC1208 + 68882 20MHz	
PC1208 + 68882 33MHz	
PC1208 + 68882 40MHz	
PC1208 + 68882 50MHz	
With 2MB	
PC1208 + 68881 20MHz	£139.95
PC1208 + 68882 20MHz	£159.95
PC1208 + 68882 33MHz	£199.95
PC1208 + 68882 40MHz	
PC1208 + 68882 50MHz	
With 4MB	
PC1208 + 68881 20MHz	£240.95
PC1208 + 68882 20MHz	£269.95
PC1208 + 68882 33MHz	£285.95
PC1208 + 68882 40MHz	
PC1208 + 68882 50MHz	
With 8MB	
PC1208 + 68881 20MHz	£419.95
PC1208 + 68882 20MHz	£439.95
PC1208 + 68882 33MHz	
PC1208 + 68882 40MHz	
PC1208 + 68882 50MHz	

pc 1204



The original PC1204 4MB 32-bit memory expansion is still available, and is exceptional value.

PC1204 with 4MB RAM	
PC1204 with 4MB only	£185.95
PC1204 + 68881 20MHz	
PC1204 + 68882 20MHz	£235.95
PC1204 + 68882 33MHz	£259.95
PC1204 + 68882 40MHz	
PC1204 + 68882 50MHz	

A4000 peripherals

33MHz FPU	003
40MHz FPU	£79
SCSI-2 card (bare)	£132
1MB for SCSI-2 (Max-8MB)ed	ich £40

miscellanousproducts

PowerMouse	£15
Optical Mouse	£29.95
Replacement Optical Mat	210
100 Branded Disks + Box.	249.95
10 Branded Disks	£4.99
A1200 Dustcover	5
Maverick 1 Joystick	£15.99
Python 1 Joystick	9.99
Apache 1 Joystick	27.99

xIdrive



The 1.76MB Disk Drive* can be used with any Amiga. With the 'XL Drive' you can fit a massive 1.76MB on a high density floppy disk, the drive can also act as a standard 880K drive and can also read & write disks written on an Amiga 4000 internal HD drive.

External XL Drive£85	,
Internal XL Drive£75	,
A4000 Internal XL Drive£75	,
*Requires KickStart 2 or above.	

exclusiveproducts

pc880 upgrade

Power Computing can now upgrade your PC880 drive from a 880K to a 1.76MB high density drive, all you need to do is check that you have the serial number 'Sony MFD17W-22' on your disk drive casing. (You'll need to unscrew the casing. This does not affect the warranty)

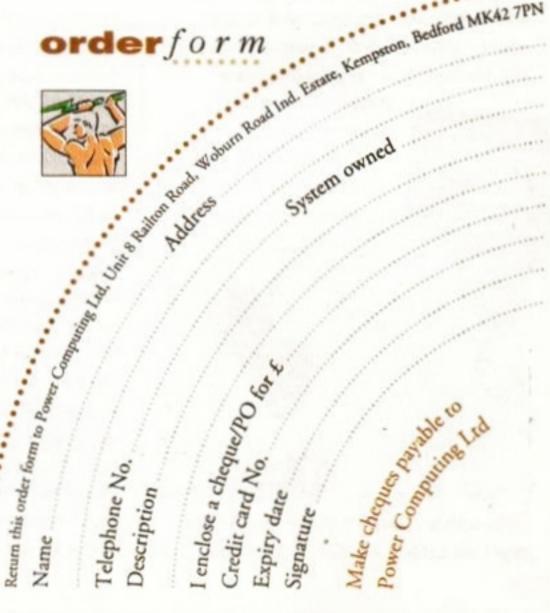
PC880 Interface upgrade £49.95



diskexpander

This Easy to use and install expander can add 60% to your Hard Drive capacity. It quickly compresses and decompresses data and is very reliable ensuring no data corruption. It works with all drives, SCSI, IDE, floppies, even RAD disk and is expandable as new compression libraries are developed.

Disk Expander £35

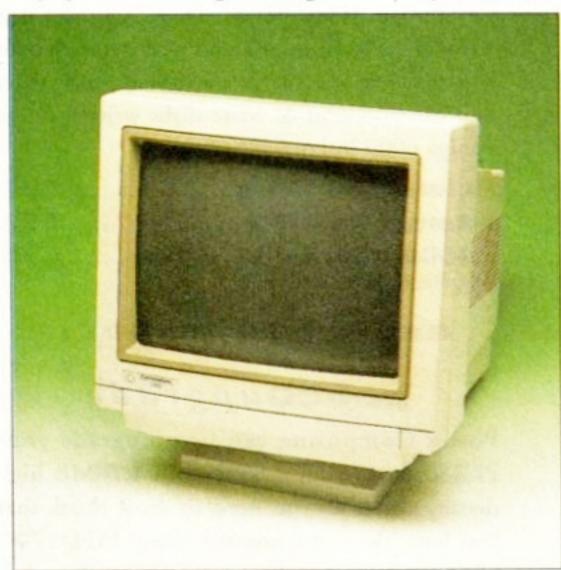


delivery next day £5.00 2-3 days £2.50 Saturday £10.00 deliveries are subject to stock availability

Commodore 1942 monitor

ith the advent of the new AGAchipset Amigas such as the A1200 and A4000, even buying a monitor isn't as simple as it used to be.

Back in the old days, any standard RGB monitor would happily display the entire range of Amiga



Commodore's 1942 monitor - solid construction, tube by Philips, Amiga-colour-coordinated... and multisync!

screen modes, but the AGA chipset offers a number of new screen modes that are incompatible with standard RGB monitors. These "DBL" modes offer much better picture definition and even rid the Amiga of the dreaded interlace flicker that plagues high-resolution screens

on pre-AGA Amigas. They do this by operating at twice the horizontal scan rate of conventional Amiga displays, meaning they require a monitor that can keep up. This is exactly what Commodore have come up with in the new 1942 monitor.

The 1942 is actually a "dual sync" monitor - it is capable of

displaying not only the higher speed DBL screen modes. but the standard Amiga screen modes too. Not impressed? You'd be surprised how many multisyncs can't handle the slower 15.75 kHz signals and therefore can't display software that by-passes Workbench 3.0's "mode promotion" facility (which bumps up the display mode automatically). This includes the many games that "hit the

hardware", which makes them impossible to convert to DBL format.

The cream casing matches the AGA Amigas, and as you'd expect from Commodore, the build quality is very good too. All the controls (which are located behind a flip-down panel on the front of the monitor) have a

very positive and responsive feel to them. The 1942 has a high dot pitch of 0.28, which means it offers better picture resolution than, for example, Commodore's other new monitor, the 1940, which has a rather mediocre 0.39 dot pitch (but is £100 cheaper).

The 1942 comes with a "hard wired" lead that ends in a VGA-like 15-pin D connector (the kind used by PCs). Thankfully Commodore include a suitable adaptor that converts the 15-pin connector to the more standard 23-pin Amiga RGB plug.

The picture quality is very good, especially when compared to the old single-scan 1084 monitor, but the unit we tested did have a few problems - the tube displayed disturbing signs of purity problems, "pin cushioning" (where the edges of the screen warp, rather than being perfect rectangles) and convergence errors, which become particularly bad in high-resolution mode because the smaller pixels reveal more colour "ghosting". This was probably just a fault in the test unit, and if so, the 1942 is a good option. However,



By: Commodore UK Available from: Silica Systems, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX **☎** 081 309 1111

rumour has it that Philips are soon to release a successor to the brilliant CM8833 that will be able to handle AGA modes, and it may be worth waiting to compare this with that before parting with your readies. Jason Holborn

CHECKOUT COMMODORE 1942 MONITOR

Build Quality

As well-designed and solidly built as you'd expect a Commodore monitor to be, with a reliable Philips tube.

Picture Quality

Very good when compared to a conventional single-scan monitor, but not quite up to the same standards as leading multisyncs.

Documentation

The manual tells you how to set the monitor up but little else. Some form of pin-out diagram would have been nice.

Value for Money

May seem cheap when compared to the original 1084, but there are other (and better) multisyncs available for the same price.

Overall rating

0000 Unless you're a Commodore stalwart, it may be wise to check the competition particularly Philips's soon-to-be-released successor to the CM8833.

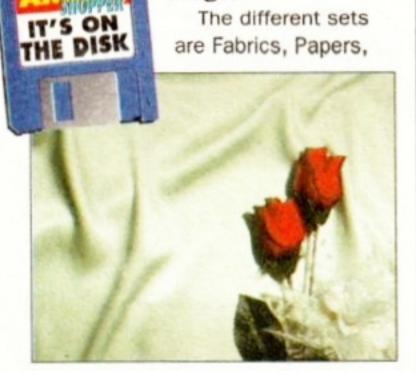
Nexus Backdrop



ix sets of disks full of copyright-free images, each set costing £29.99 that's Videoworld

Multimedia's Nexus Pro Background Sets. Available in two flavours, AGA and "Pre-AGA", the whole collection contains around 140 images derived from digitised photos, real-world objects and slides. I saw a review set including a "representative"

cross-section of images.



This one's "Satin": there's another you can check on the cover disk.

Textures, Travel and Weddings/ Romantic, with the sixth set being an introductory "Sampler" set consisting of the "Best Of" the five full sets.

The AGA variations are mainly 704 x 566, 256-colour or HAM-8 images and boy do they eat up disk space. Most of the demo images were well over 300K in size. some even as large as 400K, which goes some way to explaining

why the AGA sets have ten disks per set to the Pre-AGA's seven, even though the Pre-AGA sets actually contain more images. If you want to get at them fast (for instance while running a live desktop video presentation) you'll definitely need to save them to a hard drive. I'd also think some extra memory would come in very handy if you're using an A1200 with the HAM-8 images.

The Pre-AGA images are mostly 16-colour 704 x 566 images - again overscanned, but of course with not quite as much colour as their AGA counterparts. The obvious result is that the non-AGA files are smaller,

> but with much of the original colour inevitably lost. However, I'm pretty sure that this won't bother non-AGA Amiga owners, especially if they are familiar with the excellent 16-colour backgrounds supplied with

Some examples of the Nexus Pro backgrounds. This one is "floor" ...

SHOPPING

Nexus Pro Backgrounds per set or £130 for all five full sets By Videoworld Multimedia From Videoworld, 8 Ardoch

Gardens, Cambuslang, Glasgow G72 8HB. **☎** 041.641 1142.

ScalaMM and Scala VT100. **Gary Whiteley**

CHECKOUT NEXUS PRO BACKGROUNDS

Documentation

No printed documentation supplied with review set, but I didn't need any to use the images and a Readme file told me all I needed to know.

Ease of Use

Use your favourite paint, presentation

or image-viewing program, so long as it can handle the picture formats.

Value for Money

Plenty of pictures for the pound, though of course the value depends on whether you're likely to use all the images.

Overall rating

From what I've seen these pictures look excellent, though I'd have preferred them to be delivered in 24-bit JPEG format as standard, not at extra cost.

V sets may be cheaper, but on a monitor the difference in picture quality is really enormous – especially with a multisync such as this, though you can't plug it into any Amiga except an A3000 without a

CHECKOUT MICROVITEC MONITOR

Features

Above average for a multisync.

Documentation

Technically precise but irrelevant to Amiga users.

Ease of Use

Set it, forget it.

Performance

One of the best sub-£500 tubes I've seen, plus NTSC and PC compatibility.

Value for Money

Worth it, but not by a lot.

Worth it, but not by a lot.

Overall rating

A good display, but just out of most people's price league.

Microvitec multisync monitor

Commodore interface (£20 from First Choice), which plugs into the 23-pin video connector and gives a standard 15-pin S-VGA output.

The 9-pin multisync cable supplied, although not an Amiga standard, should connect to most deinterlacer ("flicker fixer") units and also some 24 bit display cards like the Image Engine (see page 20). You don't actually need a deinterlacer though – the monitor scans the incoming video signal, be it 15 or 31KHz, and synchronizes the picture automatically so that it doesn't jump.

The monitor has a universal power supply to use US voltage, and can take NTSC Amiga output as well as PAL. It can automatically detect IBM PC CGA/EGA TTL input and switch to the different standard, though this is redundant for Amigas.

The screen display warms up

SHOPPING LIST

Microvitec Multisync £410
From: First Choice, Unit 3, Armley Park
Court, Off Cecil Street,
Stanningley Road,
Leeds LS12 2AE

20532 319444

quickly and is very good compared to similar .28-inch matrix tubes. Colours were noticeably crisper than my aging CBM 1950 multisync, with great luminescence (brightness). Edges were sharp, and low black levels produced acceptable shadows.

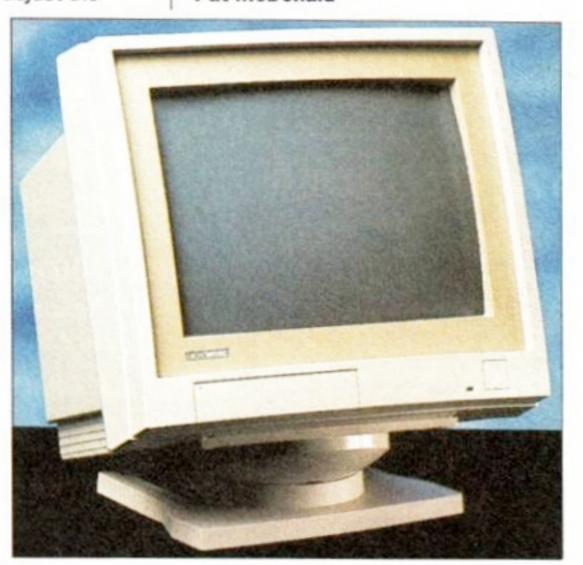
You don't select image size or adjust positioning with a simple knob. Instead, four buttons are used to change the setting, adjust the

position and store the final tweak. It's nice to see a programmable monitor, but I would prefer to be able to store a range of different settings for use with different displays. One less useful feature is that the power light changes from green to amber when the monitor is receiving what it thinks is a sync signal.

Rather than sporting the pathetic loudspeakers found in cheaper monitors, this one has no sound at all, so you'll have to plug in your hi-fi system. Fair enough; the Amiga sounds better when run through decent amps anyway.

This is an expensive monitor, but if you are a globe-trotting serious Amiga graphics user and you need to differentiate between every single pixel on-screen, it could be a worthwhile investment.

Pat McDonald



Microvitec's multisync monitor: a steady picture, even if you go to the US or hook it up to a PC, if you must.

Paint, a new addition to the world of Amiga paint programs, offers most of the usual features, and then some. Possibly its strongest point is full ARexx support, meaning you can use ARexx to control its functions for you, from scrolling text to animations or writing a CAD

CHECKOUT RPAINT

Features

ARexx and AmigaDOS support –

brilliant! And most of the standard art package functions are there.

Somewhere.

Documentation

Full, but heavy! Keep your Jargon Busting columns handy.

Ease of Use

Okay if you know ARexx or can learn keyboard shortcuts very quickly. Otherwise slow and tedious continually pulling down menus.

Value for Money

Depends what you want. I want features I can use.

Overall rating

Shame, it could have been outstanding.

package running under the RPaint umbrella. You can also control RPaint direct from AmigaDOS.

There are huge capabilities in screen size, from 320 x 200 right up to 16,368 x 16,384, as well as the option of a palette ranging from two to 64 colours. HAM however is not supported. A "Doodle mode" enables you to mess around while the old 68000 processor is tied up making time-consuming calculations, and two bitmaps give you the *DPaint* "Spare/Main screen" option. Overscan is supported in all the working modes, and you can create icons for any of the pictures, brushes or palette files you might care to make.

Unlike other art packages, RPaint does not have a collection of tools either drawn down the side of the screen or in a sub-menu. Instead, the generation of all drawn shapes, fills, brushes, and all the rest is done by pull-down menus:

- Project handles the usual disk and file loading and saving controls, as well as Info and Print.
- Tools is the main drawing and

SHOPPING LIST
RPaint£52.25

From: MegageM, 1903 Adria, Santa Maria, CA 93454, USA \$\infty\$ 0101 805 349 1104

RPaint

image-generating menu, with options for geometric solid and hollow forms, as well as text importing, brush creation, fills and grid overlays.

 Environment allows movement between screens, plus colour control, pattern fills and grid alterations.

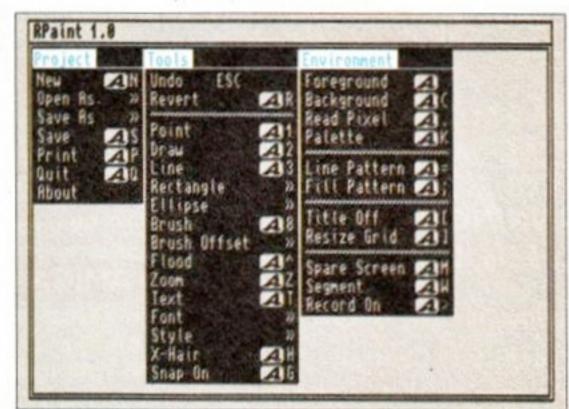
All options on the menus have the expected keyboard short-cuts, but learning a whole set of routines is time-consuming, and the absence of on-screen icons makes using the program very slow. I found myself growing impatient with having to move to the menus all the time.

RPaint does grow on you, but it doesn't really stand up well to the inevitable comparison with DPaint. It has many of DPaint's features, but they're harder to use and harder to get at. Automating them with ARexx is fine, but you have to work them out in the first place, and in any case the average user will want to just use the program, not bother with scripts

and such. The whole package is not intended for the beginner, and the manual reflects this, being written in unfriendly and technical jargon.

It will take you longer to familiarise yourself with *RPaint* than most art packages, and the drawing and painting capabilities, which is what an art program should be all about, remain hard to use without icons or colour menus. As it is, and despite the excellent ARexx support, the usefulness of this program as a paint package is limited.

Wilf Rees



RPaint's features – most are analogous to DPaint's.

There are keyboard shortcuts for most, but learning them is time-consuming and there are no icons to help.

COMPUTER CENTRE OPEN 7 DAYS A WEEK

OPEN MON - SAT......9.30AM-5.30PM SUNDAY OPENING......11.00AM-3.00PM THURSDAY NIGHT LATE ... 9.30AM-7.30PM MOST BANK HOLIDAYS...11.00AM TO 3.00PM

PREFERRED DEALERS FOR ACORN, CITIZEN, COMMODORE, DIGITA, PACE, PRIMA, SEGA, STAR ROMBO, SUPRA, US ROBOTICS

HOW TO ORDER

Order by telephone quoting your credit card number. If paying by cheque please make payable to the:

"FIRST COMPUTER CENTRE." In any correspondence please quote a phone number & post code. Allow 5 working days for cheque clearance

- Credit available! Please phone for details
- All prices include VAT
- OAll hardware/computers are UK spec.

UK MAINLAND DELIVERY TARIFFS

- Standard Delivery£1.00 Guaranteed 2 to 3 day
- (week days) Delivery......£2.50 Guaranteed Next Day
- (week days) Delivery.....£4.90 Open seven days a week
- 1 200 sq. ft. showroom
- Free large car park
- Overseas orders welcome
- Educational orders welcome
- **FULL REPAIR SERVICE**

We offer a FREE quotation on your

computer or any peripheral (monitors, printers etc.). A delivery charge of just £5.00 is charged or alternatively you can visit our showroom.

SALES & TECHNICAL

24 HOUR MAIL ORDER **SERVICE 6 LINES!**

0532 319444

FAX: 0532 319191

FOR DESPATCH & RETURNS ENQUIRES TEL. 0532 319444

SHOWROOM ADDRESS: DEPT. AS, UNIT 3, ARMLEY PARK COURT, OFF CECIL ST, STANNINGLEY ROAD. LEEDS, LS12 2AE.

(Follow A647 signs from

Leeds City Centre)

It is recommended that prices are confirmed before ordering goods E&OE.



2% surcharge on AMEX

FIRST COMPUTER CENTRE (LEEDS) Tel: 0532 3 19444 **AMIGA 1200**

RACE & CHASE PACK only £289.99!

NOW WITH NIGEL MANSELL FI AND TROLLS!

A 1200 DESKTOP DYNAMITE PACK only £339.99

HARD DRIVE VERSIONS

R&P pack D D pack 64Mb.....£439.99....£489.99 85Mb.....£489.99....£537.99

127Mb.....£519.99....£564.99

209Mb......£589.99.....£629.99

Amiga 4000/030

only £894.99 for 80Mb version or £959.99 for 120Mb version

Amiga 4000/040 from £1889.99

AMIGA 600 Basepack now with X OUT game (LIMITED OFFER) only £189.99!

AMIGA 600 64HD The Epic pack20 Mb Hard drive, Epic, Rome, Myth, & Trivia Pursuit, Dictionary, Language Lab & D. Paint 3 only £359.99 (Inc On Site Maintenance)

The A600 Wild, Weird & Wicked Plus "X OUT" shoot em uponly £ 194.9 A600 DELUXEONLY £245.9

A600 20HD DELUXE....ONLY £339.99 ic. ROM sharer with 1.3 & 2.04 ROM's making

PRIMA A1200 REAL TIME CLOCK

at last now you can date and time stamp your files Fits directly onto the motherboard with no soldering.

now only £12.99!

check for compatibility

A600 & 1200's HD kits

Add £14.99 for Real Time Clock

20Mb...... 689.99 60Mb....*£179.99 210Mb... £359.99 Just Add £10.00 for fitting

THE AMAZING ZOOL PACK!

ZOOL (97% Amiga Computing, Nov 92)

STRIKER (94% CU Amiga, June 92), PINBALL DREAMS (94% AUI, Sept 92)

TRANSWRITE word processor

only £29.99

only £19.99 with any AMIGA!

NEW! AMIGA CD32 PACK

only £289.99

CD Rom Amiga A570

Turns your Amiga 500 into a CDTV. Includes Fred Fish CDPD disk & Sim City

now only £147.99!

PRINTERS

All our printers are UK spec.



COMPUTER PRINTERS

HEWLETT PACKARD

All our printers come with ribbon/toner, printer drivers (if available), paper & cables!!

CANON Canon BJ10sx.....£199.99

Laser quality output. Large buffer

Canon BJ200.....£304.99 3 page a min speed, 360 dpi, small footprint & 80 page sheetfeeder

Canon BJ230.....£359.99 wide carriage version of above Canon BJ300.....£419.99

Desktop bubble jet with laser quality Canon BJ330.....£464.99

Wide carriage version of the BJ300 New!Canon BJC600 Col..£574.99 new bubble jet from Canon

BJI0 Autosheetfeeder...£49.99 Canon BJ10 cartridge.....£18.99 CITIZEN NEW LOW PRICES!

Citizen printers have a 2 year guarantee Citizen Swift 90 Colour......£169.99 Excellent value 9 pin colour. Highly recommended Swift 200 Colour.....£204.99 Same out put as the 240 but with less facilities

Swift 240 Colour.....£249.99 24 pin, 240cps draft, 10 fonts, quiet mode, 240cps. Swift Auto Sheet feeder..£79.99 **HEWLETT PACKARD**

HP Deskjet Portable..only £274.99 New! HP510 mono.now £261.99 HP 500 Colour.....now £309.99

HP 550 Colour.....now £514.99 4 times faster than the HP500C!!

HP500 mono cartridges.....£14.99 Double life 500 cartridges.....£24.99 All HP printers come with a 3 year warranty **SEIKOSHA**

Seikosha SP-1900.....£124.99 Seikosha SP-2400.....£154.99 Seikosha SL-90.....£159.99 Seikosha SL-95.....£295.99

Seikosha Speedjet 300...£319.99 12 month extended warranty £10.00

STAR

StarLC20.....£132.99 180 cps draft, 45 cps NLQ, quiet mode and multi fonts, push button operation.

Star LC 100 colour.....£149.99 9 pin colour, 8 fonts, 180 cps draft, 45 cps NLQ

Star LC200 colour.....£195.99 9 pin colour, 8 fonts, 225 cps draft, 45 cps NLQ, A4 landscape printing.

NEW! Star LC24-30 Col......£229.99

NEW! Star LC24-300 Col.....£299.99

24 pin quality, 210 cps draft, 67 cps LQ, 39K buffer expandible to 48K, 10 fonts and quiet mode.

Star LC24-200 colour.£264.99 Colour version with 30K buffer expandable to 62K Star SJ48 Bubble jet.....£217.99 Laser quality, ultra quiet, Epson compatible & portable **NEW!** Star SJ144 Colour Thermal

Stunning affordable colour printer. 3 PPM, low running costs only £514.99

Star SJ48 cartridge..... .618.99 StarSJ144 cartridge (pack of 3)..... ...£42.99 Star SJ48/BJ10 Refill kit......£11.99

Laser Printers on-site warranty standard

Seikosha OP-104.....£579.99 4 PPM HP2P emulation HP Laserjet 4L.....£609.99 IMb RAM, 4 ppm, small footprint

OKI 400e.....£514.99 4 page laser, mult font, 512k memory, HP emulation

Ricoh LP1200.....£669.99 add just £114.99 for 2 Mb of extra RAM

5 page laser, HP emulation, multi font, 300Dpi

Star Laserjet LS5.....£564.99

All our monitors are UK spec. All monitors

come complete with a free Amiga lead

PHILIPS CM8833 MK2 Colour Colour stereo monitor. 600° 285 line resolution, gree screen facility, one years on site maintenance.

only £209.99 UK Spec. PHILIPS Tilt & Swivell stand ... £13.99

Commodore 1084ST Colour

GOLDSTAR SVGA .28 dp Colour monitor with overscan only £249.99

Goldstar TV/Monitor..only £169.99

COMMODORE 1940 Dualsync, .39 dpi only £284.99 COMMODORE 1942 Dualsync, .28 dpi only £379.99

COMMODORE 1960 multisync .28 dpi only £379.99

MICROVITEC 14" MULTISYNC Iyear warranty Only £399.99

SCANDOUBLER only £139.99

RETINA 24 bit graphics card from £334.99

SUPRA MODEMS

The Supra-Fax 144LC V.32 bis (14400 baud!)

ow cost version of the classic V32Bis Fax modern. Feature

The Supra-Fax Modem V.32 bis (14400 baud!)

odem from Supra has full 14400 baud capability ec includes V.32bis, V.32, V.22bis, V22, V21, MNP2-V.42, V42bis, Class I & 2 commands, 9600/14400 oup 3 Fax. Includes free modem comms s/w &

only £244.99!

Supra Fax +.only £119.99

GP fax software

All Supra Modems come with a 5 year warran

US ROBOTICS

PREFERRED DEALERS ourier V32bis+FAX......£379.9

Courier HST (16.8)....... Courier HST/Dual 16.8 Fax..£503.5 Sportster | 4400 FAX......£264. Sportster 2496+FAX......£152.9

WorldPort I 4.4+FAX.....£289.99

PACE MODEMS

ER O ER O

ER O

ER O ΓER Φ

ER O ER O ER O

ER O

ER O

ER O ER Φ

ER O ER O

ER O

ER O

ER Φ

ER O ER O

ER O

ER O ER O ER O ER O

ER O ER D ER D ER D ER O

ER O

ER D

ER DI

TER O

TER D

ER D

ER D

ER O

ER D

ER O

ER O

ER O ER O

ER O ER O

ER O ER O ER O

ER Φ ER O ER O

ER O ER O ER O

> ER O ER O

ER O ER O

ER O

COMPUTER CENTRE OFIRST COMPUTER CENTRE OFIRST COMPUTER CENTRE OFIRST COMPUTER OF				
C		ST COMPUTER CENTRE		
- 0	PRIMA A500 & A600 RAM	Discostant Onus 4	ROMBO PRODUCTS	SOFTWARLSTOCK
- 0	ASOOP A600	Kindwords 3£24.99	New! VIDI 12 Real Time.£134.99 Real time colour digitizing from any video source.	BUSINESS Gold Disk Office U.K. spec
C	Unpopulatedonly £16.99£23.99	Capital 12	New! VIDI 24 Real Time.£223.99	Home Accounts 2. £37.99 Maxi Plan 4. £24.99
C	Populated to 512Konly £19.99£28.99 Populated to 1 Mbonly £28.99£33.99	PAGESTREAM 2 2 DTP only 664 00	24 bit quality real time colour digitizing from any video source. Full AGA support	Mini Office
C	2 Mb A600 OR A1200 RAM card£114.99	XCOPY PRO PLUS HARDWARE £25.99	New! VIDI 12 AGA£74.99	MISCELLANEOUS
C	4 Mb A600 OR A1200 RAM card.£169.99 AMIGA A500 512K RAM by PRIMA	TECHNOSOLIND TURBO and 775 00	Full support for AGA chipset. Colour images captured in less than a second, mono images in real time with	GB Route Plus 645.99 R OF
C	for the original 1.2/1.3 AMIGAonly £13.99	Technosound Turbo 2£34.99	any video source. Multitasking s/w, cut & paste. VIDI 12 SOUND & VISION AGA	Audio Engineer Plus V2 6243.99 R OF
C	32 BIT RAM (for A4000 etc)	ROCHARD DRIVES for the A500/A500+	with built in Megamix Master£98.99	Bars & Pipes Professional (259.99) Clarity 16 sampler (105.99)
C	I Mb SIMM£POA		TAKE 2£37.99	Deluxe Music Construction Set v2
C	2 Mb SIMM£POA 4 Mb SIMM£POA	The best wild be to be the transfer of the	animations and IFF files. Supports HAM graphics.	Stereo Master 629.79 SUPER JAM 674.99 R OF
C	8 Mb SIMM (only for Microbotics)£POA	OV1 1100 · II OIII 2177177	Megamix Master£29.99 8 bit, high spec. sampler. Special effects include echo	Techno Sound Turbo
C	RAM & CUSTOM CHIPS	POWER SCANNER V3	that can be added in real time, fully multitasking & easy to use.	Amos Creator C34.99 R OF
C	Co processors for the A4000	With the latest version 3 sofware for bright & sharp grey scale performance. Flexible scanned image display	ACCELERATORS	Amos Compiler 621,99 R DF
C	Motorola 68882 PLCC(33Mhz)£74.99 Co processors for Microbotics	manipulation options, plus Clean up, embolden, resize & flip. Only £99.99 on demo	The second secon	Amos Professional Compiler now only £24.99
C	Motorola 68882 PGA (33Mhz)£79.99 Motorola 68882 PGA (40Mhz)£89.99	Colour version only £239.99	New M1230 for A1200 withup to 128 Mb fast RAM! M1230 XA 33Mhz, 0Mb£245.99	DEVPAC 3. 450.99 R ΦF Easy AMOS 424.99 D Φ F
C	Motorola 68882 PGA (50Mhz)£169.99	EPSON GS6500 COLOUR FLATBED	M1230 XA 40Mhz, 0Mb£264.99	LATTICE C Language Version
C	(for Microbotics boards inc crystal chip) Imb by 8/9 SIMMSper I Mb £POA	Art Department Pro Scanner S/W£109.99	M1230 XA 50Mhz, 0Mb£329.99 See "RAM & CUSTOM CHIPS"	AGA Grapics Utilts 27976
C	4 Mb by 9 SIMMSper 4 Mb £POA I Mb by 4 DRAMSper I Mb £42.99	compatible with Epson ES300C, ES600C,	section for prices on Co-pro's and 32	Andy's Workbench 3 Utils
C	I Mb by 4 ZIPSper I Mb £39.99		bit RAM. Call for prices on upgrades from MBX1200Z to MBX1230XA	Fit Chicks AGA 2653B Grand Prix Manager 2639
	256 by 4 DRAM (DILs) 4+ (512K)now only £3.99	MICE & TRACKERBALLS	GVP	Klondyke AGA 2797C 2797C Last Stand in Hoth A 2754A
	8+ (1Mb)now only £3.94	90% rating. Our best selling mouse	A1230/0Mb RAM for A1200 only £284.99	The residence of the property
	16+ (2Mb)now only £3.89 Kickstart 1.3£17.99	DATALUX CLEAR MOUSE	A 230/1Mb RAM for A 200 only £384.99 6882 Co Pro for A530only £129.99	Magic Workbench
	Kickstart 2.04£24.99 Fatter Agnes 8372A£25.99	The state of the s	1500/2000 G-FORCE 030-25MHz with 4Mb	Revelations 2545 Spectrum Emulator version 1.7. 2710
	Super Denise	THE PART AND REPORT OF THE PARTY OF THE PART	32 bit RAMonly £479.99 G-Force 030-40MHz with 4Mb 32 bit RAM	Spectrum Games Disk
10	6571-0326 Keyboard controller£13.99 CIA 8520A I/O controller£7.99	DISK DRIVES	only £729.99	AMIRACK UTILITIES
10	MICROPOTICS DAM		NEW! SUPRA ACCELERATOR for the A500/A500+	AMIBACK TOOLS
	The MBX1200Z	Prima 3.5" only £56.99 I meg high quality external drive at a great low price.		AMIGA Release 2.1 software upgrade£49.99
TC	CO-PROCESSOR & RAM	Roclite 3.5" only £59.99	28 Mhz, uses A500 side port so	CARLES FOR CO. CO. C. A. C. P. C. A. C. P. C. A. C. P. C.
TC	BOARD for the A1200	super slim Roclite. Best review for disk drives in Amiga Format. Now with built in virus checker and	only (120 00)	GP FAX 2.3 software 649.99 Giga Mem 651.99
TC	Realise the full potential of your A1200 with this trapdoor expansion, inc real time clock	anti click device!	THE RESIDENCE OF THE PARTY OF T	Prima A600/1200 Hard Drive setup R (D)
TC	68881 14MHZ£119.99 68881 25MHZ£129.99	The state of the s	ACCESSORIES	software. This is the best setup software on the market!
TC	68882 33MHZ£139.99 68882 50MHZ£209.99	I meg external drive. The best name in disc drives now at a great price.	Real Time A1200 internal clock moduleonly £12.99 Mouse/joystick manual port switcheronly £13.99	
TC	The RAM boards can only work with the use of the Co-Pro board	OPALVISION	Computer Video Scart Switchonly £19.99 2/3/4 way Parallel port sharers £POA Amiga Sound Enhancer Plus by Omega Projects. Hear the Amiga's	Quarterback Tools Deluxenow only £64.99
TC	SUPRA RAM	24 bit graphics card & video system for the 1500	sound like you've never heard it before!only £36.99	VIDEO AND GRAPHICS DAD
TC		only £509.99 with Imagine 2!	QUALITY MOUSE MATS (3.99 20 CAPACITY DISK BOX (2.99	Adorage
TC	Simply the best! Fits onto the side expansion port Auto configures with no software patching.	PICASSOII	40 CAP LOCKABLE DISK BOX	Art Department Pro 3only £145.99 Q
TC	8Mb pop to 2 Mb	Expense in the land of the second of the sec	*150 CAP STACKABLE BANX BOX	A.D.P. Tools Pro V2
TC	8Mb pop to 8 Mb£319.99	arrived with this true 24 bit graphics board for	when purchased with other product or when buying 2 or more. AMIGA A500 DUST COVER	CALIGARI 24 NEW! 10 Drugs and animation
TC	8Mb pop to 2 Mb for 2000/1500 range£149.99	the A2000/3000/4000. IMb version£289.99	AMIGA ASSO DOST COVER	Deluxe Paint 4 AGA
GI	GVP PRODUCTS	2Mb version£325.99	12" MONITOR DUSTCOVER (5.99	Image Master RT
1	A500 products	GENLOCKS	STD 1.8 METRE AMIGA PRINTER LEAD(4.99 MODEM AND NULL MODEM CABLES(9.99	Make Path for Vista
TC	HD8+/0Mb drive£127.99 HD8+/42Mb drive£197.99	THE COURSE AND THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDR	AMIGA CONTROL STATIONS A500 or 1 200 VERSION	Morphus by Impulse for Imagine. #59.99 R DF Real 3D Classic #65.99
TC	HD8+/80Mb drive£297.99 HD8+/120Mb drive£397.99	only £119.99	A600 VERSION	Real 3D V2 (349.99 R D) Scala I.13 (49.99
TC	A530/42Mb drive£397.99	GVP Genlockonly £297.99	BONDON BONDON REPORT STATES AND	Scenary Animator V4 (3Mb regired)649.99
TC	A530/80Mb drive£497.99 A530/120Mb drive£597.99		DISKS All disks are 100% error free guaranteed	VIDEO DIRECTOR £115.99 COPY VIDEO MASTER £49.99
TC	A530/213Mb drive£697.99 PC286 Emulator for HD8+/A530£94.99	Includes dual control for overlay and keyhole effects, extra RGB pass thru. Now A (200 compatible)	New High density 3.5 inch bulk and branded	WORD PROCESSING/DTP
TC	A I 200 Products	Rendale 8802 FMConly £169.99	Please phone for best prices! 3.5" DDIDS OR 3.5"DD/DS	FINAL COPY 2 (UK) RELEASE 2 only 666.99
TC	SCSI/RAM/FPU OMb	ROCGEN ROCKEY	QTY Bulk OR BRANDED	Thesaurus, spelling checker & much more.
TC	only£394.99	For creating special effects in video production	10£4.99£6.99	KINDWORDS V3. only £24.99 PENPAL I.4. only £29.99
10	33 Mhz 6882 for A I 200 SCSI/RAM only£77.99	with genlocks Only £139.99	30£14.99£17.99 50£21.99£28.99	Best selling feature packed word publisher with database. PAGESTREAM 2.2U.K. version
IC	External SCSI kit SCSI/RAM£47.99 A 1 2 3 0 RAM FPU board£247.99	PRIMA ROM SHARERS	100£39.99£54.99 200£73.99£99.99	PAGESTREAM 3 U.K. version only £249.99 PAGESETTER 3 £42.99
IC	A 1 2 3 0 with 4 Mb RAM Board £ 3 9 7.99	This high quality ROM sharer features a flexible ribbon connection so that it can be positioned anywhere within your A500 Plus or A600. Full 2 year replacement	500£169.99£POA	Hot Links £48.99 PRO PAGE V4. £109.99
TO	A1500/2000/3000/4000 Products HD8+/42Mb£197.99	now only (19 99 or (27 99	Branded disks come complete with labels	PRO PAGE V4 & Pro Draw 3 NEW!
TC	HD8+/80Mb£297.99 HD8+/120Mb£397.99	for keyboard switchable version	Disk Labels500now only £6.99	Prowrite 3.3 NEW! (38.99 R D) THE PUBLISHER DTP NEW PRICE! (24.99 R D)
10			Disk Labels1000now only £9.99	WORDWORTH 2 AGA

Wordworth v2 AGA

he new version of Digita's high-end word processor Wordworth v2 AGA is exactly the same as Wordworth v2, the only differences being added support for 256-colour custom screens, plus DbIPAL, Super72 and Super High-Res Interlaced. HAM-8 graphics are also now supported, plus 256-colour ILBMs and PCX files.

Wordworth's specialist area is printer font support. It is the only WYSIWYG Amiga word processor that will enable you to swap printer fonts

Project Edit Format Document United Wordworth Find and replace. or had a fact of a product of a party of the farafarafarafaga katala Spelling checker... User dictionary... Lorem ipsum Gossary... dolor sit amet aHyphenate conservatuer adipiecing el Create list_ narummy nibh suismad tir Create index. dolore magna aliquam erat witi enim ad minim veniam exercitation ullamcorper s niel ut sliquip ex es comm d Duis autem vel eum inure dalar in hendrerit in vulgutate veiit esse malestie cansequet, vei illum dalare eu feugist nulla facilisis at vero eras et accumson et lusto adia dignissim qui blandit præsent luptatum zzril delenit augue duis dolore se feugais nulla facilisi. Lorem losum dolor sit amet, consectetuer adiplacing ell t, sed diam nanummy nibh euismod tincklurt ut laareet dalare magna aliquam erat volutgat. Ut wisi enim ad minim veniam, quie nostrud exerci tation ullame orper suscipit lobortis nisi ut aliquip ex ea commodo consequat. Dule autem vel eum irkure dolor in hendrerk in vulgutate velit esse molestie consequal, vel illum dolore eu leugiat nulls facilisis at vero eros el accumsan et kusto adia dignissim qui biandit præsent luptatum zzril delenit sugue dula dolore te leugait nulla facilisi. Nam liber tempor cum soluta nobis eleifend option

Provided you have the memory and the time (and a fast Amiga), Wordworth v2AGA will enable you to include 256-colour pictures in your documents.

mid-document, mid-line, or even midword if you must. You can also use some of the fonts built into various printers, which means faster printing, but these are not scalable, so you are stuck with certain sizes, usually 10pt and 12pt, which are dictated by the printer. Not all the fonts in every printer are supported, so check with Digita before shelling out.

For greater font flexibility, you can use Compugraphic outline fonts. Wordworth v2 AGA comes with 17 of them, and plenty more are available commercially and on PD disks. Their

> disadvantage is that everything is printed as graphics, which considerably slows down printing times. PostScript printing is supported in mono only, and Wordworth comes with screen fonts for the classic 35 typefaces found in most PostScript printers. There is no facility to use or download PostScript soft fonts.

Of all Amiga word processors, Wordworth currently has the most features and the best all-round printer support, qualities that are reflected in its price. It has a pleasant user-interface that isn't too difficult to learn, thanks to the excellent manual, and in a sensible word-processing screen mode it runs as quickly as any other WP. However, running it in even 16 colours slows it down badly on anything but an Amiga 4000, almost unusably so. In 256 colours, even on an A4000/040, Wordworth v2 AGA is so slow that I can't imagine anyone living with it.

Weighing price against features and performance, Wordworth v2 AGA is certainly the best word processor on the Amiga. But compared to the top Windows™ word processors WordPerfect and Microsoft Word on the PC, which cost about the same, Wordworth looks very ordinary indeed. Wordworth 3 is just around the corner and great improvements are expected, so watch this space.

Jeff Walker



CHECKOUT Wordworth v2 AGA

Features

More features than any other Amiga

word processor, but way behind what word processors on other platforms are offering.

Documentation

A good manual, slightly spoilt by the lack of a beginners' "how to" section.

Ease of Use

Intuitive interface, but getting the printout you expect can be difficult for beginners.

Speed

Yawn in anything but two or four

colours.

Value for Money

In today's marketplace, underpowered and overpriced.

Overall rating

The best current Amiga WP, but Wordworth is rapidly falling behind the times. A version 3 to match the likes of Word for Windows is needed.

CygnusEd Professional

programs have stayed the course, but CygnusEd Professional, better known as simply Ced, is one of them. It was launched about six years ago when Kickstart 1.2 was still the new kid in town. And even then it supported a weird thing called ARexx, which - I quote from a review of the time - "apparently has the ability to interface with other programs". Sends shivers down my spine, that does.

ot many Amiga

Ced is not a word processor, it is

a text editor. You can process words with it, of course, but Ced's main calling in life is not to prepare and format text ready for printing, it is essentially for writing and developing programming language source code, be it in C. assembler, Pascal, ARexx, AmigaDOS or whatever. Most of the features are biased towards helping the Amiga programmer produce and maintain code more quickly, like the unbeatably fast search and replace facility. On an A4000/040 Ced can replace 100,000 occurrences of one character with another character in a

> 1Mb file in about 10 seconds - that's 10,000 finds and 10,000 replaces every second. Obviously it's not so quick on the slower Amigas, but even on a straight A500 the average search and replace task is over before you blink.

There's more to text editing than search and replace, of course, and Ced has just about every feature that a programmer could

want from a text editor, including comprehensive macro and ARexx support. Heck, if you are a C programmer you can even send commands to Ced straight from your C program rather than having to go through ARexx.

Up to 30 Ced windows can be opened, each with a different file, or each showing a different view of the same file. Simple word wrap and formatting features enable you to use Ced as a rudimentary word processor, and indeed most shareware programmers bash out their manuals in Ced, which accounts for the carriage returns at the end of every line instead of at the end of every paragraph, which is what a word processor would do.

It would be unfair to call Ced the ultimate Amiga text editor because there are a growing number of programmers using Oxxi's rival Turbotext package these days. But Ced has stayed the test of time and

0000000 SHOPPING LIST

CygnusEd Professional 3.5 £79.95 By: CygnusSoft Software and ASDG Inc. Available in the UK from: Brian Fowler Computers Ltd, 11 North Street,

Exeter EX4 3QS **☎** 0392 499755 has a pedigree second to none. Jeff Walker

CHECKOUT CYGNUSED Professional 3.5

Features

Contains more features than you'll probably ever use.

Documentation

240 pages, half of which is dedicated to controlling Ced via ARexx.

Ease of Use

You hit a key, a letter appears on the

screen. But thanks to the sheer number of commands, it'll take a while longer to learn all of them.

Speed

The speed of its search and replace feature is phenomenal.

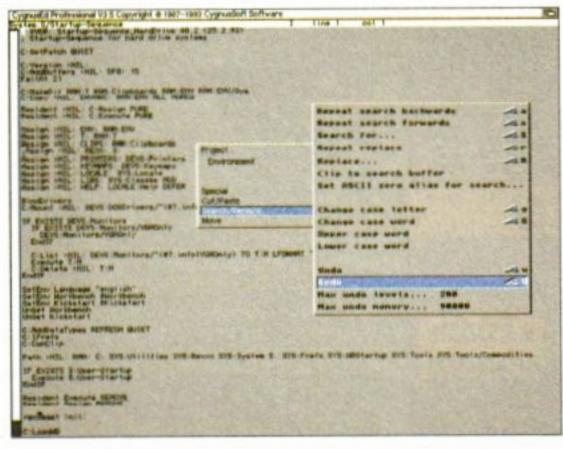
Value for Money

00000

A bit pricey compared to average non-WYSIWYG word processor prices.

Overall rating

A million Amiga programmers over six years can't be wrong.

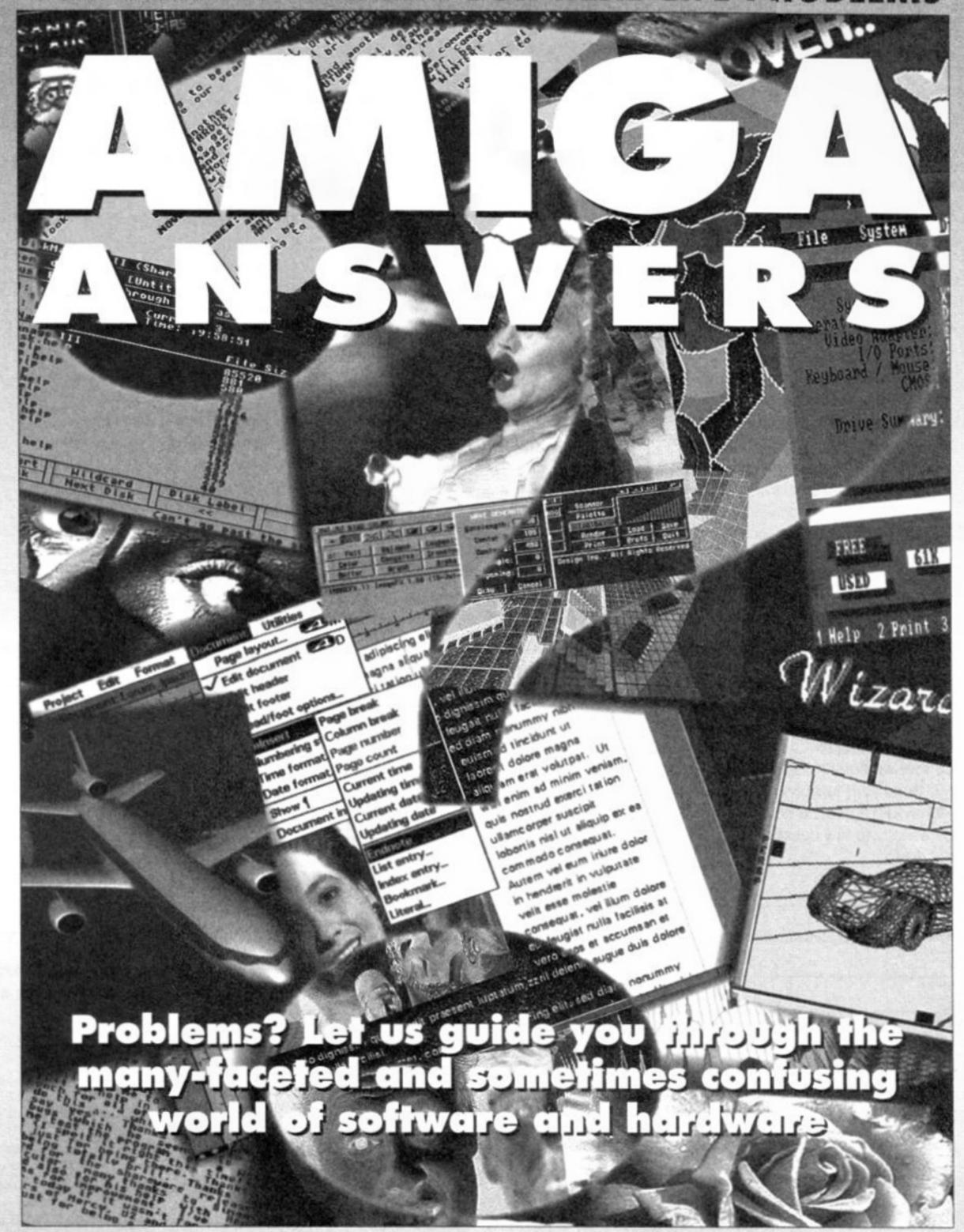


CygnusEd Professional's comprehensive Undo and Redo levels make it easy to step quickly backwards and forwards through a text editing work session.

CONTENTS AT-A-GLANCE

A5000	46
Accelerators	48
AGA	47
Agnus	47
AmigaBASIC	48
Assign	39
Atari ST	46
B00PSI	40
Bootblock	
Bridgeboards	39
Bulletin board45,	
C40,	46
Canon printers39,	
CanonStudio	40
Chip RAM	47
Citizen Print Manager	40
Code Clinic	46
CrossDOS	46
Deluxe Paint	47
DevPac 3	48
DICE	40
Fidonet	39
Flicker-free display	48
FPUs	48
FreeMem	47
GadTools	40
HOBS	48
Libraries	48
MessyDOS	46
Modem	45
NCOMM	45
Outline fonts39,	46
PageSetter40,	46
Pascal	46
Printer drivers	
Scanners	
Shell	39
Star printers	40
T	39
TERM45,	48
Terminal software	
Trapdoor	39
Turboprint	
Viewdata	48
Virus killers	39
Wordworth	39
68060	46

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS



USING THE ICONS TO FIND WHAT A QUESTION'S ABOUT



Questions that raise basic problems or deal

with elementary issues feature this icon.



for general Amigarelated queries or

This icon's

questions that don't fall under other headings.



This is the icon you'll find next to queries related to

DTP the whole area of desktop publishing.



Questions about monitors, including television

display problems, will feature this icon.



for queries relating to general hardware.

This icon's

excluding kit covered by other headings.



This icon indicates a question asking for BUYING buying

advice in any area, hardware or software.



If a query concerns printers, printer drivers and

hardcopy problems, this is the icon you'll find.



Questions about coding (no matter which

language) will have this icon next to them.



This one's for queries about using your Amiga with

video hardware such as genlocks or digitisers.



This icon s for questions about MIDI.

sampling, synthesizers and music software.



or programs have this icon next to them.



question relates to comms, COMMS including

If your

modem problems, this is the icon we'll use.

NO PROBLEMS

ello and welcome to our magazine within a magazine - the place where we endeavour to solve all of your Amiga-related problems. We'll deal with any sort of problem, no matter how trivial or complex, no matter what aspect of the Amiga it involves. We devote more space than any other magazine to this service, and we use icons extensively to make sure you can find your way around the pages as easily as possible, and find the solutions to the problems you have. Our use of jargon-busting boxes ensures that you'll be given explanations for any unfamilar terms. We also try to put the problems in as wide a context as possible, so that their solutions will benefit not just the person who has

written in, but all of you with related problems. So even if you haven't sent a problem in for answering, it's worth having a look through these pages to see if someone else has asked a similar question. The index on the previous page will give you a guide to the topics covered this month.

We draw on the services of a talented team of Amiga enthusiasts, all of whom are widely regarded as experts in their fields. Mark Smiddy is our AmigaDOS and floppy drive expert. Jeff Walker is our desktop publishing, fonts and printer correspondent. Then there's Gary Whiteley, an expert on video applications and graphics. Jason Holborn has mastered the intricacies of AMOS, and with his advice you'll be able to do likewise.

Jason also has an encyclopedic knowledge of what's available in the PD world. If you have a query about comms then we'll set recent star of the small screen Dave Winder on the case. Toby Simpson is our expert code clinician. If you're experiencing problems with anything from C to assembler, try taxing his little grey cells instead. You'll find his special Code Clinic section - in which he removes the bugs from your programs - on page 46. Wilf Rees is a man with an education well, an expert on educational software, at least. He's also got a jolly useful all-round knowledge of Amiga hardware and software. Last but by no means least is Jolyon Ralph - he also knows lots about hardware, and specialises in hard drives and CD-ROM systems.

So that's our batch of boffins it's up to you to keep them busy. They thrive on your problems, so be sure to send them in. Remember, it doesn't matter how simple or complex they are - everyone has to start somewhere, so beginners shouldn't be afraid of asking for help, and even the most experienced Amiga user can get stuck occasionally. And if you've got any tips or hints to share with your fellow readers, then send them to us and you could soon be a tenner richer. Please mark the envelope "Tips" and send them to the Amiga Answers address specified on the form below.

Please don't include an SAE with your questions – we simply receive too much mail to be able to offer a personal reply service.

f you send in a question for the Amiga Answers experts, please fill Hard disk: ____Mb as DH__: Manufacturer in and include the form below (or a photocopy if you don't want to Extra RAM fitted - type, size in Mb and manufacturer cut up your magazine). And please also make sure that you include all the relevant details - version numbers of software and so on so that we have the best chance of helping you. Details of any other hardware which could help us to answer your question: Send your form and question to: Amiga Answers, Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW. Sorry, but we cannot reply personally to any questions - even if you include an SAE. Name: Address: Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary. Your machine: A500 Plus A1000 A1200 A500 A600 A3000 A4000 A1500 A2000 Approximate age of machine: Kickstart version (displayed at the "insert Workbench" prompt) 1.2 1.3 2.x Workbench revision (written on the Workbench disk) 1.3 2 2.04/2.05 1.2 2.1 3.0 PCB revision (if known). Do not take your machine apart just to look for this! Total memory fitted (see AVAIL in Shell for Workbench 1.3) Chip memory available (see AVAIL in Shell) Agnus chip (if known) _____ Extra drive #1 (3.5in/5.25in) as DF_: Manufacturer _____ Extra drive #2 (3.5in/5.25in) as DF_: Manufacturer **AS 33**

ANYONE FOR T?



Manchester

I recently bought an A1200. Upon loading many of my old "selfmade" disks, such as my database and so

on, I get an error window telling me to "insert volume T". When I click on cancel, the program loads as normal. Just what is "T"?

Also, I've noticed that when I insert a disk into the drive it takes a few seconds before it starts to read the disk, whereas my old Amiga (Workbench 1.3) started almost immediately. Do I have a problem or is it the same with all A1200s? **Chris Wright** Radcliffe

In AmigaDOS 3.0, when some Shell commands are executed, a temporary file in an assign called "T:" is created. Normally, the computer would look at the RAM disk to find the directory "T". In your case, it cannot find this drawer and is unable to write a temporary file. Although this error will not usually affect the running of a program, it can be quite annoying, so add these lines to near the start of the Startupsequence of your self-made disks.

makedir ram:t assign t: ram:t

Once this is done, your Amiga will know that the T: drawer is located in RAM:t.

Regarding the time lag between your inserting a disk and the computer reading the disk, you do not have a problem. Depending on how busy the CPU is at the time you insert a disk, the read times for the disk drive may vary. WR

OPEN THE TRAPDOOR



I've just installed **Trapdoor and Point** Manager on my hard disk. They seem to work okay, but when I

phone my Boss I get connected and then Trapdoor closes down without getting any messages. How do I tell It what messages to pick up and where from?

John Sparks Wellington Somerset

The problem is that you haven't yet told the software at your Boss what areas you are interested in, and to do this you need to use AreaFix. Basically when you want to join an echo you send a message to an AreaFix robot running on the BBS in question, and in order for the message to be processed you need to agree an AreaFix password with

the SysOp, so give him a call.

Using the AMIGA UK echo as an example, construct a netmail message with a body text of

+AMIGA_UK

and send it using Point Manager and Trapdoor to your Boss with a subject of <password> and address of AreaFix. The AreaFix running at your Boss will then process this and join you to the echos, and messages will be picked up next session.

So assuming your AreaFix password is "wibble", the netmail would look like this:

TO: AreaFix SUBJECT: wibble +AMIGA_UK

If you want to join several echos at once then the netmail should look like this:

TO: AreaFix SUBJECT: wibble +AMIGA_UK +WORKBENCH +AMIGA_DTP

-COMMS

Many thanks to Fidonet guru and all round nice guy Ian Moran for his expert advice. DW

BLACK PAGES



PRINTERS

Scribble! didn't work very well with my Canon BJ-10ex printer, but with help from Canon we discovered

by trial and error that it could be made to work as long as the Workbench 2 disk used with it had a USA keymap, and as long as the BJ-10ex was used in Epson LQ mode.

This wasn't very satisfactory, so I bought Wordworth 2. Since February Digita have provided me with two replacement disk packs, but the system will still not print outline fonts; it will only work with internal printer fonts. If I try to use outline fonts my BJ-10ex will only

print a solid black block, even if on the screen just one character is displayed.

I recall there has been a history of difficulties with printer drivers associated with Canon BJ printers. Canon were most helpful and sent a disk with an appropriate driver for the Scribble! program. Digita's Wordworth comes with its own Canon BJ driver, but is this a valid driver? If it would be better to install Canon's own driver to make Wordworth function properly, can you explain how this should be done?

A Sanders Hempstead Essex

Huh? What history of Canon BJ printer driver problems? The truth is the complete opposite. Canon UK were sensible enough to commission the development of a disk of Amiga printer drivers, thus making Canon bubble jets one of the most compatible printers you can buy for use with your Amiga. That disk is what I assume Canon sent you, although it has been updated a couple of times since February, so perhaps you don't have the latest version.

To install the correct Canon driver for the BJ-10ex, simply run the installation program on the Canon drivers disk and answer the few questions it poses (like what printer have you got). It's an absolute doddle. The Canon driver is a much later version of the driver distributed by Digita on the Wordworth disk they asked for and got permission from Canon to include it on the Wordworth disk.

The last time this "solid black block" cropped up it was with Professional Page and it was solved by making sure that the Shade option in the Workbench PrinterGfx prefs program was set the same as the equivalent setting in the Professional Page print requester. So try that. And make sure the BJ-10ex

is in BJ mode, not Epson LQ mode. If you want to use the BJ-10ex in Epson LQ mode, use the EpsonQ driver that was supplied to you with Workbench. JW

AMIGA ANSWERS

SURE OF SHELL



1. I have a number of programs that require an "assignment" to be made in order to work correctly from my hard

drive. The manuals bundled with these packages say that I should place these assignments into my "S" directory. When I type the assignments in using the Shell "Edit" command and reboot, the programs still try to access the disks they came from. Please tell me exactly how to save my assign statements in such a way that they are automatically carried out whenever my hard drive boots up. 2. I have an XT bridgeboard fitted to my machine. It would be nice if I could use the 5.25-inch drive to run some C64 software. I have an emulator but it only operates on the 3.5-inch drives. Is there any way to make the emulator acknowledge the existance of the XT bridgeboard drive? This drive was fitted at the time I purchased my machine. 3. Finally, I have read in Amiga Shopper that it is wise to have a virus killer running at all times. How do I insert the virus killer into my startup-sequence so that it is always running when the machine is booted up? **Charles Hooker** Stroud Gloucestershire

1. It sounds to me as if you're not entering the assignments into the correct file. If the manuals are simply stating that the assignments should be placed into the "S" directory, then this is a little misleading. They should in actual fact be entered into your "StartUp-Sequence" file, which itself is in the "S" directory. Simply enter this line at the Shell prompt:

Ed S:StartUp-Sequence

Then enter your assignments somewhere within the startupsequence and with a little bit of luck it should work.

2. Unfortunately there's no way to get the disk drive connected to your XT bridgeboard to read C64 disks, simply because C64 disk drives have their "DOS" (disk operating system) built into their firmware - that is, in ROM. In order to read C64 disks, you'll need to buy a special adaptor produced by the emulator manufactuer which will enable you to connect a real C64 disk drive to the Amiga.

3. If you're using a program like John

JARGON BUSTING

BBS - Bulletin Board System. The name comes from the American College bulletin board (the cork and drawing pins type) which is a traditional meeting and trading place.

FIDONET - a system enabling many bulletin boards to be connected together so that messages can be transfered bewteen them.

Startup-sequence - A program

which is executed every time the Amiga is switched on and after every reset. It sets up the system so that it is usable from Workbench, and may be customised by those who have unusual requirements.

SysOp - System Operator - the person who sets up and controls a bulletin board.

Trapdoor/Point Manager – Specialised FIDONET software.

Veldthuis' Virus Checker (successive revisions have been on the Amiga Shopper cover disk a number of times in the past), the easiest way of "installing" it is to simply copy it into the WBStartUp drawer on your hard disk boot drive. JH

BETTER SOFTWARE REQUIRED



When I'm using my Amiga 1200 and the Citizen Print Manager software with my Star PRINTERS LC24-200 printer, the

software gives a recoverable alert. If, after recovering, I try to print, the machine gives a software failure after printing one page. I have also tried Turboprint and this does the same thing.

E Hayes Blackburn Lancs

Obviously Citizen Print Manager and Turboprint, two programs (from the same German developers) that "patch" the operating system, are not completely compatible with Workbench 3. Your best bet is to get hold of CanonStudio (from JAM on 0895 274449). Although this software was written for Canon bubble jets, because Canon bubble

jets are Epson compatible, the CanonStudio "BJ-EC" driver also works with Epson compatible 24-pin printers like those made by Star and Citizen. (The "EC" in the driver's name stands for Epson Compatible.) All the CanonStudio drivers and preferences programs are perfectly stable under Workbench 3. In fact you need at least Workbench 2 to use it. JW

STRINGING ALONG



I'm trying to learn C. I have got DICE from Fred Fish Disk 491. and Mastering Amiga C by Paul Overaa. My

problem is that I can't assign strings to char arrays. I've tried examples from Mastering Amiga C. **DICE** consistently refuses to compile these. Do I need to register DICE to get this feature, or am I being really stupid? David Lambert Garrowhill Glasgow

No, you've simply found one of the features not implemented in DICE yet. I've tried this using DICE version 2.06.21 several times in different ways without luck. It was something Matt Dillon (the author of DICE) was

intending to do in a future version, and may yet do - he is currently working on a commercial version of DICE. SAS C 6.3 will do string assignments of the type you were trying (all as one line, of course):

char test_string[20] = "Hello " world!";

DICE will not compile this, as you have discovered.

Don't despair though - this will work (the means no line break):

#include <stdlib.h>

char test_string[20];

strcpy(test_string, "Hello " World!");

If you want to explore DICE some more, get hold of the new book, Complete Amiga C, published by Future Publishing and written by Amiga Shopper's own editor, Cliff Ramshaw. (You've had a taste of it in the introductory book free with this issue.) As well as covering more of the C language, it comes with the enhanced full version of DICE, which offers extra features (including the ability to do floating point maths), plus various extra utilities and documentation. It is available from

WA_Title,

good bookshops, or you can order direct - see page 74. TS

IN FROM THE COLD



When I'm importing clip art into PageSetter 3, the program happily imports ProDraw clips into an active box but

refuses to load any clip art from the Graphics Editor, which is supposed to be hotlinked. It won't import directly either. I clip what I want and then use it as my brush, but then what? I've tried saving and quitting, as it says in the manual, but the active box in PageSetter 3 remains empty. I am using an Amiga 500 Plus with Kickstart 1.3 and Workbench 2. I have 2Mb of memory in all. **Gary Brunskill** Sutton Lancs

First, using Kickstart 1.3 and Workbench 2 together is a pretty silly thing to do, a bit like adding Modeo wheels to an Escort chassis. Either return to using Workbench 1.3.2, or upgrade your Kickstart to the Kickstart 2 ROM.

Right. PageSetter 3. I know that the hotlink works, but I've just tried it continued on page 45

"My Window Title",



I am programming a little text editor in C, which needs to work only on Amigas with Kickstart 2.04 and upwards. I would like to have a CODING scrollbar with arrows. The scrollbar

should be located in the right border, and should look like the scrollbars in Workbench windows. How do I do it? It is easy to make a scrollbar with arrows when you are using GadTools library, but you can't put it in the border, and it does not look like the one on the Workbench windows. The only way to do this is to use Intuition's old gadget routines, which makes the scrollbar look right, but how about the arrows? I could, of course, do my own custom gadgets emulating the arrows, but they are different in Workbench 2.0 and 3.0. I would like to have arrows which look right on both systems. I know that it is possible, because the text editor of DevPac 3 uses the right kind of arrows on both systems. Janne Pietarila

Espoo **Finland**

This is a tricky one, and I remember being baffled by it myself only recently. The solution is to use BOOPSI gadgets. BOOPSI stands for Basic Object Orientated Programming System for Intuition. Using BOOPSI, you can clone the built-in proportional and arrow class gadgets and use them for yourself, which is precisely what both Workbench and DevPac do. It's quite complex, and I'd certainly recommend that you read the

section on BOOPSI in the ROM Kernel Manual on Libraries and Devices, published by Addison-Wesley and availble from any good computer bookshop (ISBN 0-201-11078-4).

Here is a small example of the definition for a scrollbar gadget that will fit in the right hand border of your window. You'll need to patch it into a full program with Includes, but this should at least get you going. You can also create images from BOOPSI, which is where you get your standard arrow buttons from. TS

LISTING: BOOPSI EXAMPLE:

```
static struct TagItem rz_maptags[] =
 PGA_Top, ICSPECIAL_CODE,
 TAG END
 );
/* Padding so that it all looks great */
#define
               TW_VPADLEFT 4
#define
               TW_VPADRIGHT 4
#define
               TW_VPADTOP
#define
               TW_VPADBOTTOM 1
void test_boopsi(void)
struct Gadget *my_vert_gadget;
struct Window *my_window;
/* Open this window */
if (!(my_window = OpenWindowTags(NULL,
 WA_Left,
 WA_Top,
                       0,
                       640,
 WA Width,
 WA Height,
                       200,
                       TRUE,
 WA_CloseGadget,
```

```
WA_SizeBRight, TRUE,
 WA DragBar, TRUE,
 WA SizeGadget,
                      TRUE,
 WA DepthGadget,
                      TRUE,
 WA Activate, TRUE,
 WA_SmartRefresh,
                      TRUE,
 WA IDCMP,
               IDCMP CLOSEWINDOW,
   TAG_DONE)))
    return;
/* Create our boopsi gadget */
my_vert_gadget = (struct Gadget
*) NewObject (NULL, "propgclass",
   GA_ID, GID_VERTGADGET,
   PGA_Freedom, FREEVERT,
   PGA NewLook, TRUE,
   PGA_Borderless, TRUE,
   PGA_Top, 0,
   PGA Visible, 10,
   PGA_Total, 10,
   GA_RelRight, -(my_window->BorderRight -
TW_VPADLEFT - 1),
   GA_Top, my_window->BorderTop + TW_VPADTOP,
   GA_Width, my_window->BorderRight -
TW_VPADLEFT - TW_VPADRIGHT,
   GA_RelHeight, -(my_window->BorderBottom +
my_window->BorderTop + TW_VPADTOP +
TW_VPADBOTTOM),
   ICA_TARGET, ICTARGET_IDCMP,
   ICA_MAP, rz_maptags,
    TAG_END);
/* Now add this gadget to our window and
refresh it */
AddGList(my_window, my_vert_gadget, -1, -1,
RefreshGList(my_vert_gadget, my_window, NULL,
-1);
```

Protext 6 - A Winning Performance



Some highlights of Protext 6

Styles

Styles let you make flexible use of printer fonts and effects. You can change a font throughout a document with a single operation.

Graphics

Graphic images may be imported into a Protext document. Supports IMG, PCX, GIF and IFF. You can select any resolution and scale the image. Dot matrix, inkjet and laser printers.

Document Layout

An easy to use dialogue lets you lay out your page precisely as you want using inches or cm for the page length, margins and tabs.

Printers

Protext's unrivalled understanding of printers gives you the highest quality printing at the highest possible speed. Using a printer's built in fonts enables Protext to print pages in seconds rather than the minutes taken by some programs.

Protext is still the fastest

- Fastest at editing.
- Fastest at spell checking.
 - Fastest at printing.

Protext still has the best printer support

- Hundreds of printers supported
- PostScript driver included NEW
 - Scalable font support NEW
 - Colour printing NEW
 - Automatic line spacing NEW

Protext still has the most advanced features including:

- Styles NEW
- Graphics import NEW
 - Spelling checker
 - Thesaurus
 - Hyphenation
 - Document analysis
 - Glossary NEW
 - Footnotes
- Widows and orphans
- Index and contents
- Addition of numbers
 - File sorting
 - Mail merge
- Programming language
 - Macro editor NEW
- Dictionary editor NEW

WorkBench New Look

- New WB menus, requesters, gadgets
- Screen requester to select mode NEW
 - ARexx interface NEW

The list price of Protext 6 is £152.75 but you can order direct today for just £99 inclusive. For any Amiga with 1Mb memory and WB 2.0 or later. Phone us today and we will send you a usable demoversion and a full specification, absolutely free. Upgrade offers available - please call us for the current price.

7/8/19

Arnor Ltd (AS), 611 Lincoln Road, Peterborough, PE1 3HA

Tel: 0733 68909 (24 hr),

Fax: 0733 67299

GASTEINER

Tel: 081 365 1151 Fax: 081 885 1953

Unit 2, Millmead Business Centre, Millmead Road, Tottenham Hale, London N17 9QU

ERGONOMIC DESIGN TRACKBALL SERIES

One	colour£29.99
Two	colour£34.99



MONITORS

Philips 8833	£199
Commodore 1940	
Commodore 1942	£379
Microvitec Club Scan	£379
Microvitec 20"	£1049

PRINTERS

Citizen Swift 200£200
Citizen Swift 240 Mono£270
Citizen Swift 240 Colour£295
Citizen Swift 24X£340
Citizen 120D+£129
Citizen Swift 90 Mono£165
Citizen Swift 90 Colour£188
Citizen PN48 Notebook Printer .£225
Citizen Projet Inkjet£318

HEWLETT PACKARD

HP Deskjet Portable	£369
HP 510 Mono	
HP 500 Colour	£319
HP 550 Colour	£519

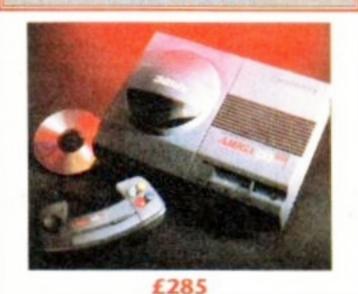
STAR

Star LC 20	£132
Star LC 100 Colour	£155
Star LC 200 Colour	£195
Star LC 24-20 Mk II	£224
Star LC 24-200 Col	£264
Star SJ48 Bubblejet	£217
Star SI48 Auto Sheetfeeder	£49

LASER PRINTERS

Fujitsu VM 600 Laser	£679
HP Laserjet 4L	
OKI 400e	
Ricoh PCL5	£809
Star Laserjet LC5	£589

AMIGA CD32



2203

A1200 + A600	HARD DRIVES
20Mb	Eart 5 (52)
30Mb	£89
40Mb	£119
60Mb	£169
85Mb	£199
120Mb	£239
207Mb	£329
All with II	DE cables

CDTV ADD-ON

-		1500		6130
For	A500,	A500+,	A5/0	£129

ROMBO DIGITISERS

VIDI 12 Real Time	£134.99
VIDI 24 Real Time	£219.99
VIDI 12 AGA	£75.00
Take 2	£38.00
Megamix Master	£30.00

AMIGA A1200

2Mb	RAM	20Mb HD£359
2Mb	RAM	64Mb HD£429
2Mb	RAM	85Mb HD£479
2Mb	RAM	127Mb HD£509
2Mb	RAM	209Mb HD£579
		only£289

ACCESSORIES

Pen mouse for Amiga with optical
pad£34.95
Pen mouse for PCs with optical
pad£34.95
Optical mouse, 300 dpi for Amiga£29.95
Infrared mouse, 300 dpi for PCs£49.95
Infrared mouse, 300 dpi for Amiga.£49.95
Opto-mech mouse for PCs with
pad & holder£18.95
Opto-mech mouse for Amiga w.pad &
holder£14.95
Opto-mech low cost mouse for
Amiga£8.00
Opto-mech low cost mouse for
PCs£10.00
3-button trackball for Amiga£29.99
"Cristal" trackball for Amiga£34.99
3-button trackball for PCs£34.99
512Kb RAM expansion for A500+£16.99
1Mb RAM expansion for A500+£19.95
External 3.5" floppy drive£50.00
Kickstart switch for A500, A2000£14.95
Kickstart switch for A600£29.95
Electronic boot selector£14.95
Auto mouse/joystick switch£10.99

Dust Covers£6.00

n land

AMIGA 4000 (25MHz 68030)
2Mb RAM 80Mb HD£949
4Mb RAM 120Mb HD£1069
4Mb RAM 214Mb HD£1169
4Mb RAM 245Mb HD£1269
4Mb RAM 340Mb HD£1369
4Mb RAM 540Mb HD£1669

AMIGA 4000 (25MHz 68040)

6Mb RAM 80Mb HD	£1919
6Mb RAM 120Mb HD	£2069
6Mb RAM 214Mb HD	£2169
6Mb RAM 245Mb HD	£2269
6Mb RAM 340Mb HD	£2369
6Mb RAM 540Mb HD	

P.S.U.

Power Supply (High Watt)
for A500£29.95
Power Supply for A1500 +
A2000£69.95

FAX MODEM

Feld - Fe Manda	61.00
Fold a Fax Modem	£129
With Fax Software	£179

AMIGA MEMORY UPGRADE

A500 ½Mb	£14.95
A500 ½Mb + Clock	£23.95
A500 + 1Mb	£19.95
A600 1Mb	£19.95
A600 1Mb + Clock	£29.95
1Mb SIMM (GVP)	£29.95
4Mb SIMM (GVP)	£149.95
1Mb 72PIN (A4000)	£99.00
4Mb 72PIN (A4000)	POA
PCMCIA 2Mb	£89.00
PCMCIA 4Mb	£149.00

A1200 RAM

4Mb with Clock, no FPU Processor£169
4Mb with Clock, 20MHz 68881 FPU£209
4Mb with Clock, 25MHz 68882 FPU£269
4Mb with Clock, 33Mhz 68882 FPU£279
4Mb with Clock, 40Mhz 68882 FPU£289
4Mb with Clock, 50Mhz 68882 FPU£309

40MHz ACCELERATOR FOR A1200

0Mb	RAM	£299
4Mb	RAM	£499

TRADE ORDERS WELCOME

How to order



MEMORY MASTER 1200

Internal RAM expansion with clock for Amiga 1200, populated with 1, 5 or 9Mb

AF1200 1Mb with clock, no Oscillator, no FPU Processor£115 AF1200 5Mb with clock, no Oscillator, no FPU Processor£239

AF1200 5Mb with clock, Oscillator, 16MHz 68882 FPU£285 AF1200 5Mb with clock, Oscillator, 20MHz 68882 FPU£290

AF1200 5Mb with clock, Oscillator, 25MHz 68882 FPU£295

AF1200 5Mb with clock, Oscillator, 33MHz 68882 FPU£299 AF1200 9Mb with clock, no Oscillator, no FPU Processor£369 AF1200 9Mb with clock, Oscillator, 16MHz 68882 FPU£415

AF1200 9Mb with clock, Oscillator, 20MHz 68882 FPU£420 AF1200 9Mb with clock, Oscillator, 25MHz 68882 FPU£429

AF1200 9Mb with clock, Oscillator, 33MHz 68882 FPU£439

When ordering by telephone please quote your credit card number followed by the expiry date and also your full name and address. If paying by cheque please make it payable to Gasteiner Technology. In any correspondence please quote a phone number and also a postal code, please allow five working days for cheque clearance.

Delivery charges

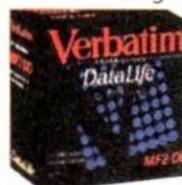
Small consumables and software items under the value of £59 please add £3.50 P&P. Other items except lasers, next day courier service £10 per box. Offshore and highlands, please call for a quotation. In addition, we offer the following express services:- Saturday delivery normal rate plus £15 per box, Morning, next day normal rate plus £10 per box. E&OE prices subject to change without prior notice, goods are subject to change without prior notice. All trademarks acknowledged.

PCMCIA RAM CARD RAM expansion for Amiga 600 and 1200 PCMCIA. Slot populated with 2 or 4Mb



VERBATIM DATALIFE DISKETTES

For guaranteed data retrieval



 100% ERROR-FREE. You get total reliability. Each diskette is subjected to more than 70 chemical, magnetic and electrical tests to ensure it delivers exceptional accuracy and readability.

As low as £4.49 box of 10

AUTO MOUSE/JOYSTICK SWITCH

FOR AMIGA/ATARI

Allows you to instantly select either your mouse or joystick by a simple click on your mouse. You won't need to fumble around under or behind your computer to swap your mouse and joystick cable ever again, and also it saves your joystick port.

AT A GIVEAWAY PRICE £9.99

MOUSE 400



New from Japan. The 400 DPI mouse with Hi-tech mechanism, microswitch buttons, small, fits nice and snug in the palm of your hand. All at an affordable price of

£14.95

ALFAPOWER

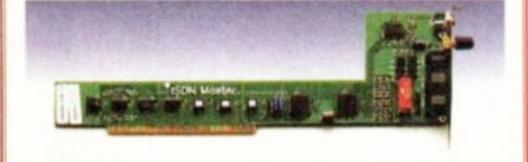
IDE/AT-Bus controller for Amiga 500 with 8Mb RAM option; for 3.5" and 2.5" drives.............£99



Controller for A500/A500+	£99.00
Controller + 40Mb HD	
Controller + 85Mb HD	£249.00
Controller + 120Mb HD	£299.00
Controller + 170Mb HD	£329.00
Controller + 240Mb HD	£369.00
2Mb RAM	£69.00
Autoboot, Autoconfig and	

ISDN-MASTER

The data transfer sprinter for the Amiga 2000, 3000 and 4000.....



SCANNER

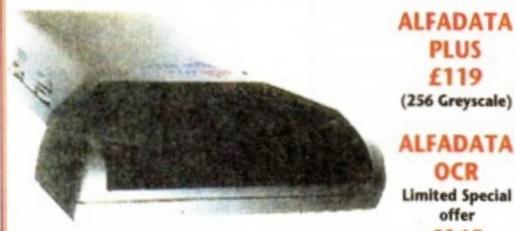
Newcomers who like to scan detailed graphics or complicated images experience with the ALFADATA a favourable alternative to typing or re-scaling and investing a lot of time. Advanced users who insist on the efficient character recognition and comfortable graphic software. Choose between ALFA-DATA plus or ALFA-GOLD AWARD - ST FORMAT DATA plus OCR.

> PLUS £119

> > OCR

offer

£145



System requirements to run OCR: minimum 2Mb RAM and hard drive

MEMORY MASTER 2000

8Mb RAM expansion for Amiga 2000, 3000 and 4000; uses 514400 DRAM chips.



AT-BUS 2008

IDE/AT-Bus controller for Amiga 2000, 3000 and 4000 with 8Mb RAM Option.£99



	AND DE
Controller for A1500, A2000, A3000	and A4000£99.00
Controller + 40Mb	
Controller + 85Mb	
Controller + 120Mb	
Controller + 170Mb	£329.00
Controller + 240Mb	£369.00
2Mb RAM	£69.00
Autoboot, Autoconfig and Ze	ero wait states

MULTIFACE CARD 3

Multi I/O card for Amiga 2000/3000/4000; 2 additional serial ports and 1 parallel port. £149



GIGAMEM

Virtual memory management for all Amiga with MMU. Including 040 support.£59



Most recent powerful applications for the Amiga (eg: for graphics, music, animation, raytracing, D.T.P.) require more main memory than is available or possible to integrate. GigaMem is a program which simulates up to 1 GigaByte memory, which swaps onto any mass storage system (i.e. hard disk). Intelligent management accomplishes simultaneous use of several programs in a multitasking mode.

System requirements:-

- ★ GigaMem works with all AMIGA <R> computers with MMU (Memory Management Unit): i.e. Amiga's with 68020 or 68030 accelerator and MMU.
- * No restriction on type of HD controller and hard disk.
- ★ GigaMem is compatible with Kickstart 1.2/1.3 and 2.x.

£59

TRUEPAINT

24 Bit paint program for all Amigas; also AA Chipset£69



Paint Program for Amiga Application: TruePaint is a professional 24 bit paint software with full suppport of the AA chipset Amiga line. Using TruePaint, Amiga graphic and 24 bit graphic can be edited without any loss of quality. A maximum of 16368 x 16368 pixels renders your graphics for slide development systems. feasible even for slide development systems.

FEATURES:

- ★ Up to 16368 x 16368 pixel with oversize function.
- ★ Various draw and paint functions.
 ★ Functions for mask, outline, recolor and filling.
- * Airbrush with adjustable spray functions and stipples.
- ★ Transparence curves also by brushes.
 ★ Slant, rotate, scale.
- * Easy drawing of Beziér curves.
- ★ Lightable function for editing animation pictures.
 ★ Text functions with full support of Bitmap and
- Compugraphic fonts.
- ★ Load and save with different formats: IFF, ILBM, PPM (Unix), IPEG and TruePaint special format.
 ★ Quick View of pictures with MINIPIC function.
 ★ Any Macro functions can be assigned to 20 function keys.
 ★ Unlimited Undo/Redo including Macros.

- * Full AREXX support. SYSTEM REQUIREMENTS:
- * All Amiga with AA chipset, e.g. Amiga 1200/4000.
- ★ Kickstart™ 3.0 or above. * Minimum 2Mb graphics memory.
- * Additional memory recommended.

Repair service

New service centre/repair for most Amiga computers. We offer a quotation service of £10 for which we will examine your computer and report back with an exact quotation price for the repair. If the repair is carried out the £10 is then deducted from your bill.



COMMODORE & AMIGA END USERS & DEALERS

TOP SELLER ADVANCED AMIGA ANALYSER

AN INEXPENSIVE DIAGNOSTIC ANALYSER THAT WORKS ON ALL AMIGAS

Amiga Shopper UK magazine says "Without doubt, this is the finest diagnostic equipment I have ever seen, and I address all Amiga repairers and practical-minded users when I say this is really something worth having."

WE CARRY ALL COMMODORE CUSTOM CHIPS AND ACCESSORIES AT LOW DISCOUNTED PRICES.

WRITE FOR FULL LISTING OF ALL COMMODORE/AMIGA SURPLUS PRODUCTS. DEALERS: WRITE TO US ON YOUR LETTERHEAD

Phone hours (British time) 2-11pm Mon-Fri

THE GRAPEVINE GROUP INC. 3 CHESTNUT STREET, SUFFERN, NEW YORK 10901 U.S.A.

INTERNATIONAL ORDER LINE: 0101-914-357-2424



FAX LINE: 0101-914-357-6243 VISA





Football Result Forecasting Covers all major English & Scottish divisions. FOR FIXED ODDS & POOLS League tables & bookmakers 'handicap' starting Interactive prediction system & statistics. Point & control position system & statistics with superh flexibility & control position easy access to features with superh flexibility. Interactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics. 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & Click' user interfactive prediction system & statistics.' 'Point & St points. Database of 1993/94 fixtures. THE INTELLIGENT WAY TO WIN "..by using common sense & applying what is public knowledge in a controlled way it can aid nools fanation to make a considerate to ontrolled way, it can aid pools fanatics to make a considered choice By sifting through the results predicted for the weekend annote countries. should at least have a systematic guide to their pools coupon if not a quaranteed win ". Amina Computing Dec. 193 a guaranteed win." - Amiga Computing Dec. '93 32c HIGH STREET, WELSHPOOL, POWYS, SY21 7JP U.K. £16.95 inc. p&p 32c HIGH STREET, WELSHPOOL, POWTS, ST21 / JF U.K. Rush me Copylcopies of 'The Soccer Expert' at £16.95 each TODAY! Despatch! postal orders payable to VOITHIA. Orders normally despatched

AMIVISION SOFTWARE

Power Base v3.30

The easiest to use best value for money database package available for the Amiga.

Up to 10,000 records on a 1Mb Amiga

Easy to use - pull down menus, V.C.R style control panel, and a separate pop up menu with the most used functions.

8 field types, include IFF pictures and unlimited length text files into your records. Calculate fields automatically from others.

Incredibly powerful record filtering facilities.

Lightning fast and comprehensive searching and sorting.

Label printing, reporting and many other printer options.

Design an unlimited number of form layouts.

Output data to screen, printer, labels or a file for mail merging etc. View your records in 4 modes - page, record, table and the new

form layout view.

Hard disk installation utility, additional utilities and example files. Other features include - timed auto save, alarm, many preferences

(including a printer preferences section), add/edit fields at any time, record calculation, key macros, keyboard shortcuts, password protection, intelligent date fields, on-line help for all functions, easy record editing, personalised with each customers name and address and much more, all from one easy to use package.

Complete with detailed instruction manual for just £14.95

"It's fast, inexpensive and simple to use without being too simplistic, the user-interface is clear, friendly and good for new users".

Ease of use 80%, Value for money 90% Overall 80% Amiga Shopper October '93

White terms and the control of the c

国家市场区区区区区区区区

"The best value user-friendly database on the Amiga" Amiga Computing, September '93

"Great database with video style controls. Lots of features" Amiga Format Gold Award

"The finest example of business software to date". "Incredibly easy to use". CU Amiga

FREE FREE FREE
Catalogue upon request
DEMO DISK £1

£9.95

£5.00

The Power Collection

POWER BASE V3.30 Incredibly powerful and yet user friendly database system £14.95
WORD POWER V2 Complete word utility (crossword/anagram solving + loads more) 36,000+

word dictionary
POWER PLANNER Personal organiser (Diary, address/telephone book, automatic reminders,

regular events etc)

MENU POWER Create menus for your disks (add an IFF picture to the background - stunning)

MENU POWER Create menus for your disks (add an IFF picture to the background - stunning) £5.00 £5.00

SAVE £15! - ORDER NOW - FOR JUST £24.95!

All programs come complete with detailed instruction manuals

All programs require 1Mb and are compatible with ALL Amigas including A1200. Prices fully inclusive for UK. Overseas orders please add £1.00 P&P

Dept AS, 1 Cherrington Drive, Great Wyrley, Walsall, West Midlands WS6 6NE

*Please make cheques/postal orders payable to:- S. Rennocks



SALES 0302 326073 HOTLINES 0924 201953

A1200 DESKTOP DYNAMITE STANDALONE £279.99 £339.99 NO HDD £479.99 £429.99 64Mb 21" 85Mb 2;* £479.99 £529.99 127Mb 24* £559.99 £559.99 170Mb 31 £524.99 209Mb 21 £629.99 210Mb 31 £549.99 £589.99 250Mb 31 £579.99 £619.99 340Mb 31 £609.99 £654.99

	JE HAKL	DKIVES	
85Mb 170Mb	£199.99 £229.99 340Mb	210Mb 250Mb £349.99	£269.99 £319.99
HURSTN PROTECTION	SCHOOLS AND THE PERSON AND THE PERSO	THE THE PARTY AND THE PARTY AN	

NO SUCCESSION	MEMORY I	JPGRADES			
DJ 310 DJ 510 DJ 550C	\$234.99 \$259.99 \$529.99	The second secon	SWFT 240C SWFT 240C COLOUR KIT STAND	\$234.99 \$249.99 \$39.99 \$29.99	
STATE OF THE PARTY	MIEKO	CHILLEN PRINITIO			

MALL STREET		MEINIOK	TUFU	OFGRADES			
Microbotics FPU			OMD	2Mb	4Mb	8Mb	
MBX MBX	68881 68881	14 UZMHZ 25MHZ	119.99	199.99	299.99 314.99	499.99 514.99	
Accelerators MBX 1' MBX	1230XA M1230XA	40MHz 50MHz	249.99 359.99	329.99 444.99	429.99 539.99	629.99 739.99	

MICROCENTRE

20a Westmorland Street Wakefield West Yorkshire WF1 1PJ

20 Cleveland Street Doncaster South Yorkshire DN1 3ES

Migna your order on one of our sides | Pick up one of the side of

Priorie your order on one of our soles.
Insulfint to ansure a quick service.
Poytnerd by credit cord or cheque or postal order.
Colt of our Disnovaler store for fitting while you wolf - ook list.

Pick up and delivery \$10 fitting \$19 Allow 7 working days for delivery

continued from page 40

again anyway and PageSetter 3 and the Graphics Editor work together just as described in the manual. Import a bitmap into a box in PageSetter 3, send it to the Graphics Editor, make your changes or cut out your brush or whatever, then save it, ensuring that you use the same filename as the original bitmap. When you Quit from the Graphics Editor the bitmap you just saved will be automatically re-imported into PageSetter 3, although you'll probably have to adjust the scaling again. If you saved the bitmap from the Graphics Editor under a different filename from the original bitmap filename (the one you imported into PageSetter 3), then the hotlink will

not work.

Keep in mind that the amount of memory you have is the bare minimum for the graphics and text hotlinks to work, so some failures could be due to lack of RAM. JW

SCAN AND DELIVER!



I currently own an A500 which I use mainly for DTP, paint programs and other serious software. I feel

that to use these programs to their full potential, it would be wise to upgrade to an A1200 - I was thinking of the "Desktop Dynamite" pack with 40Mb hard drive. However, some of my present hardware plugs into the expansion bus which has been replaced by the

PCMCIA slot on the A1200. This hardware includes a Naksha hand scanner and an Action Replay Mk III cartridge. I understand that it may be impossible to use the Action Replay cartridge on the A1200, but is there anything I can do about the scanner?

R J Mooney Ramsey

Very few hand scanner manufacturers actually build their own scanner "heads" (the bit you hold in your hand when you scan an image). Naksha, for example, use exactly the same scanning head as Power Computing - the only difference between them is the interface that connects that scanner head to your Amiga and the software

that drives the scanner. It's therefore possible to use your scanner on an A1200 simply by upgrading the interface and software that you use with it. Power Computing sell the interface and the latest version 3.0 of their scanner software as a separate item for just £49.95. Power can be contacted on 0234 843388. For details of the range of Amigacompatible colour scanners, see last issue's cover feature. (Amiga Shopper 32 is available on page 106 if you missed it.) JH

AMIGA ANSWERS

ST PICTURE POSER



A friend has translated some video stills from his video recorder via an Atari ST to disk. How can I translate

A SMALL PROBLEM OF COMMUNICATION

THE FIRST STEPS



COMMS

I've purchased a modem from a friend at a bargain price, but now I really don't know what to do. How do I

actually use the thing to get access to a bulletin board? In past issues of Amiga Shopper you've mentioned different "terminal" programs, which you say are available for download from most good bulletin boards, but

how do you get connected in the first place to get them? Dr Lawnes Ryde Isle of Wight

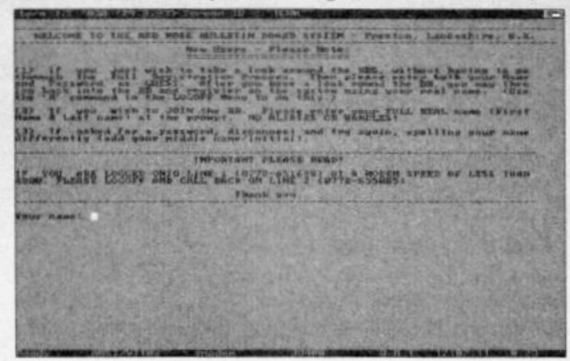
Comms can seem very confusing at first, especially when you've got a modem and no idea what to do next! Let's walk through it a step at a time.

Terminal software enables your Amiga and modem to talk to each other. Of course if you haven't got any yet you can't get on-line to a BBS to get any, so the answer is to purchase the program from your local Public Domain library - see page 120 for a directory of these.

I would recommend one of two programs. The first is TERM, which I use myself and find both comprehensive and easy to configure. TERM is a PD program and is updated at amazingly regular intervals. The second option is NCOMM, which is a shareware program that has been around for many years and is the the tried and trusted choice for many comms

users. To learn how to install these, read the documentation that comes with them - always worth doing; it can save a lot of heartache and sleepless nights later.

Once you have installed the terminal software on your Amiga, you will need to find a BBS number to call. Check Amiga Shopper's user groups listing on page 93, flip through the adverts in this issue, or try 01-for-Amiga (# 071 377 1358) or



If you log on to a Bulletin Board as a new user, you may well encounter a screen something like this ...

the Cheam Amiga Bulletin Board (# 081 644 8714). We've mentioned others in the comms column in past issues as well.

On calling a BBS for the first time

you will be asked to register as a new user. Don't be alarmed - it won't cost you anything (unless you are calling a commercial system like CIX), but the System Operator or SysOp needs to know a bit about the people he allows to use his system. Just follow

I'll answer the easy bit first. Either of the terminal software programs mentioned above, TERM and NCOMM, will be suitable. However, I

have not been able to find out any

It's not visually spectacular, but TERM is an easy-touse yet comprehensive comms program – and it's PD!

regard to your name and details, and you should find that you will be

the on-screen instructions, which will

guide you through the registration

process. Be honest, especially with

registered as a user within a day or two. From there on you can explore the wonderful world of comms at your leisure. DW

PLUG IN AND GO



I have bought a secondhand IBM modem, model 5858-01, without manual or power supply. Could

you tell me if I can get a cheap software package to run it and how much a manual and power supply would be from IBM? I have phoned both IBM and Commodore, who although helpful couldn't come up with any positive answers. **Stuart Williams** Whitstable Kent

information about this particular modem, so really don't know if it is going to be any good to you. The only way to find out is to try it. You should be able to get a power supply from an electronics shop - somewhere like your local Tandy would be a good bet. Take the modem along and they will be able to source a suitable power supply.

Connect the modem to your Amiga and run the terminal software. You can tell if the modem is talking to your computer and vice versa by typing in the Hayes Command "AT". which should get the response of "OK".

If that works, then try connecting to a BBS and see how you get on. Because you don't know the speeds of the modem in question, I would suggest starting off with a 2400 connect and then experimenting with higher (or lower) speeds, depending how successful you were.

Most modems these days are Hayes-compatible - that is, they conform to the standard set by Hayes modems - which makes them all fairly standard to use. If this modem is very old and not Hayes-compatible, I'm afraid you may just have bought a turkey. DW

JARGON BUSTING

BBS - Bulletin Board System. Like an electronic notice-board. only you read from it or write to it over the modem line.

Modem - Acronym for MOdulator / DEModulator. An electronic device that enables your Amiga to send and receive messages over the telephone lines.

this disk information so that I can reproduce the stills for viewing on my Amiga 500? I'd also like to be able to print them out. **Martin Davies** Westerham Kent

There are a number of public domain programs available for the Amiga that can translate pictures stored in either ST Neochrome or Degas format to the Amiga's own IFF format. The best thing to do is to have a chat with your friendly PD supplier (see the directory of PD libraries on page 120). They will be able to point you in the direction of the correct PD disk. Better still, has your friend got a copy of DPaint for the ST? If so, then simply get him to load his pictures into this program and save them out as IFF on the ST. Then all you need to do is read the disks.

In order to read your friend's ST disks, you'll need a copy of a program called CrossDOS. This is built into the Workbench 2.1 upgrade, or if you haven't already upgraded can be bought separately. Or you could try the PD alternative, called MessyDOS. CrossDOS and MessyDOS simply enable your Amiga to read PC-format (that is, MS-DOS) disks. The ST uses a disk format that is almost identical to MS-DOS format, which these programs can

cope with - or newer STs can read genuine MS-DOS disks, which would be more reliable for this process. Using CrossDOS or MessyDOS, simply pull the images across on to your Amiga, convert them to IFF (if your friend hasn't already done so using DPaint ST) and then load them into DPaint on your Amiga. You'll then be able to print them like any other DPaint picture. JH

BLAZING AWAY AT PASCAL



I am trying to program in Pascal, but I haven't got a single book about programming it on the Amiga - I can only find

books about programming Pascal on the PC. Could you name some books?

I have heard some rumours about an Amiga 5000, with one 68060 chip as a main processor, running at a speed five times faster than the Pentium. (That's 500MHHz, so I doubt it.) It would also have two - yes, two - 68040s for handling video and sound, and 8Mb or 16Mb of graphics RAM, giving 24-bit and 32-bit graphics. It's very disappointing that this is the minimum amount of RAM to use these colours.

I have also heard about a new project between IBM and Atari. They have plans for the ultimate

multimedia machine, which would have a 64-bit RISC CPU and a stateof-the-art DSP. What do you think of these rumours? John Versnel Avon

Pascal is not a particularly popular choice of programming language on the Amiga, so I'm afraid there isn't that much in the way of choice. The best thing to do is to buy a general book on Pascal and the ROM Kernel Reference Manuals from Commodore, which explain how to program for the Amiga. HiSoft's documentation will tell you how to use Amiga specifics.

As for the A5000, I'm afraid this rumour is totally untrue. It was a hoax. One small point: to be five times faster than the Pentium (the new Intel chip, sometimes called the "586", used in the new generation of PC-compatible), the 68060 does not have to actually operate at 500MHz. It could be five times faster and be 100MHz or 50MHz. It is the actual raw processing power that is relevant, not the clock speed of the chip. The 68060 is an exceptionally well designed chip, and at 55MHz (the first version that will be available, some time early next year), it offers over three times the performance of a 25MHz 68040, which means about 50MIPS (Million Instructions Per Second), maybe a

little more. Motorola claim that they will be able to make 68060s operating at 100MHz or more, which is more than 100 MIPS - extremely fast; the equivalent of about 150 A600s.

The IBM/Atari project is no rumour: it is the Jaguar games console, designed and marketed by Atari but containing some IBM-made components. The processor is actually 16-bit - the same 68000 chip as in your Amiga - but there is also a custom 64-bit graphics processor called "Tom" and a 32-bit Digital Signal Processor called "Jerry" for the sound side of things. The Jaguar will cost £199 in this country, but it isn't the ultimate multimedia machine by a long way at least, not yet - just a games console. Its design seems to be just catching up with the custom-chipbased architecture which the Amiga has always had; we'll have to see how well it stacks up against the likes of Commodore's well-received new CD32 console. TS

PS3 WON'T PRINT



I have installed PageSetter 3 as per the on-disk instructions. I installed PRINTERS a disk of CGFonts, the

clip art on to its own disk and the CanonBJ10 driver on to the PS3Install disk (Disk 1). I loaded

CODE CLINIC CODE CLINIC CODE CLINIC

return;



TOBY SIMPSON DEBUGS ANOTHER READER'S PROGRAM

Author: Program: Language: **Matthew Fraser Text Processor**

C

Problem:

Routine produces inconsistent results and random crashes

This month we're dealing with a Crelated problem. The author runs a bulletin board, and has written himself a small utility for producing statistics on messages left on the BBS. The messages are single files which are read into memory and then processed. The problem is that if the same message is processed twice, the program does not work. Another problem is more mysterious: occasionally, the program crashes when it is about to read in another message.

Both these problems were relatively straightforward to solve, and both are wise lessons to learn if you're programming in C. Wonderful though the language is, some types of bugs hide particularly well in it. To

find these, we first need to understand how the program works. From the command line, you can enter the number of a message to be loaded. Then typing a statistic command gets information about that message. You can then get the stats on the same message without having to re-load it, and this is where the problem lies. The first thing the statistics routine does is this:

char *text_ptr, *old_ptr; BOOL done = FALSE;

/* In this snippet, message V* points to the text itself */ old_ptr = message;

text ptr = strchr (old_ptr, '\n'); if (text_ptr) *text_ptr = 0;

msg_len = msg_len + V* (strlen(old ptr)); if (strlen(old_ptr) > V longest_line) V longest_line = strlen(old_ptr);

old ptr = text_ptr + 1;

else done = TRUE;

while (!done)

Ouite simply, this scans for the first new-line and replaces it with a zero.

This gives us a string of the first line of the message. If this is the longest line, it is remembered, and the length of the line is added to the message total, and so forth, until there is no more message left. The catch is, if you then call this routine again without reloading the message, it shows:

printf("len = %ld, max V*

line chars = %ld\n", V-

msg len, longest line);

len = 0, max line chars = 0

on the screen. This is because the strchr command, which searches for an occurrence a return - keep typing & of a particular character in a string, can't find any \n's (newline) any more because they were all removed and replaced by O's the first time the routine was called.

Watch out for this sort of thing. Always remember that if you're altering data in memory for a particular operation, make sure that

you aren't going to affect further operations in the future. This applies particularly for something like this, which actually processes an area of memory.

It would be possible to fix this bug very easily, by adding after the IF line the following line:

*text_ptr = '\n';

The symbol -L

means do not type L

to the end of the next

line. The means type

the next line.

This replaces the newline character.

The next problem was slightly more difficult to track down, particularly because it did not happen every time. I eventually narrowed it down to a rather complex routine responsible for loading a group of messages into memory and remembering where they all were in a

specially designed structure. This structure held information about the total number of messages a space, then keep memory used, and a linked list of loaded and the amount of linked list of message data. The problem lay in the first line of code in the

> routine, although this was the last place I looked:

if (msg_base->messages_ -



the program and everything worked fine until I came to print. All I get is the message: "Printer driver not graphics capable". I'm stuck. Help! P Locket (computer moron) Irlams o'th Heights Lancs

The reason you get the "Printer driver not graphics capable" message is that although you have copied the CanonBJ10 driver on to the PageSetter boot disk, the "systemconfiguration" - which is the file that tells the Amiga which printer driver to load and what settings to use (among other things) - is still set to load the printer driver called "generic". To change it so that the BJ-10 driver is loaded, you need to use the Printer program in the Prefs drawer of your Workbench disk.

The best thing to do is delete the massive Clips.lzh file on the PageSetter 3 boot disk, create a drawer on that disk called Prefs, and copy the Printer and PrinterGfx programs from the Prefs drawer on the Workbench disk (or the Extras disk if it's Workbench 2.1) into the new Prefs drawer on your PageSetter 3 boot disk. Now re-boot the machine with the PageSetter 3 disk, open the Prefs drawer and run the Printer program.

Select the CanonBJ10 driver. Set Paper Type to Fanfold. Set Paper Size to Wide Tractor. Set Paper

Length (lines) to 63. Leave Left Margin (Chars) at 1. Set Right Margin (Chars) to 80. Set Print Pitch to 10-Pica, Print Spacing to 6 Ipi, Print Quality to Letter. Now Save those settings to write a new "system-configuration" file to your PageSetter 3 disk. The important settings from the PrinterGfx program can be controlled from the PageSetter 3 print requester, so you needn't worry about running that prefs program unless you want to make a certain graphics set-up permanent. JW

PUTTING THE BOOT IN



of DPaint IV AGA.

I have been working with AmigaDOS since I traded in my old A500 for a new A1200. I have managed to gain

GENERAL a little understanding of bootblocks, the directory structure of an average disk and so on. The problem I have is with my new copy

I followed all the instructions on how to decrunch the disk but unfortunately there doesn't seem to be a bootblock on the resulting DPaint program disk. Without the bootblock, loading DPaint is a very time-consuming task. I phoned Electronic Arts to ask them how to put a bootblock on the DPaint disk. but they told me in no uncertain terms that it was impossible. Being

a bit of a stubborn chap, however, I thought I'd have a go at installing the disk with a startup-sequence myself. After a few hours I had a boot block on the main DPaint disk and a small Workbench. But although DPaint now loads fine, DPaint only allows me to use the old pre-AGA screen modes.

I think I've missed some files which I should have copied across, but I am absolutely stumped. Why did EA insist on making DPaint only useful to hard drive owners? I can't afford such a luxury, so I'd appreciate it if you could tell me what I need to do to get my copy of DPaint to access the AGA screen modes.

Jason Hardy Sandhurst Berkshire

You were very nearly there, Jason. All you need to do to get your copy of DPaint IV AGA to recognise the AGA screen modes is to copy the drawer called Monitors that can be found in the **Devs** directory on your Workbench 3.0 boot disk to the **Devs** directory of your DPaint disk. Make sure that the file PAL is in this directory and then add this line to your *DPaint* startup-sequence:

DEVS: Monitors/PAL

If everything else is okay, DPaint

should now access the AGA screen modes. JH

MISSING CHIP



SysInfo tells me that my late-model A500 is fitted with an 8372A Agnus chip. I was HARDWARE under the impression

that this device enabled the Amiga to use 1Mb of Chip RAM, but AVAIL tells me I only have 512K, with the remaining 1Mb being configured as Fast. Is there any way to increase this, or do I need to replace the Agnus chip? Adrian Howell Swansea West Glamorgan

There are a couple of possibilities here, none of which suggests some fault in Agnus. First, it may be that SysInfo is reading your Agnus chip incorrectly - but I doubt that. It is more likely that the problem lies with the Trapdoor expansion cards you are using. The A500's trapdoor slot is designed to accept 512K of expansion memory (Fast or Chip depending on the configuration of the board and Agnus fitted). Some manufacturers bypass the normal configuration and offer extended versions, although they are likely to conflict with the standard setup. This is the area you should address first.

You can check if your Agnus is

CODE CLINIC CODE CLINIC CODE CLINIC

UnloadMessages V loaded) (msg_base->messages_loaded);

Well, it looks harmless enough, but the UnloadMessages routine does a lot of memory de-allocation and resource freeing. It also does no error-checking and assumes that the caller is passing it a pointer to a MsgLoaded structure which is valid. Here is a snippet of the UnloadMessages routines:

struct MsgTag mt;

FreeMem(ml->block ram);

mt = ml->first_message;

while (mt) FreeMem(mt); mt = mt->mt Next;

There are actually two problems here, but only one is causing the particular bug in question. The first is that if the MsgLoaded structure passed in just happened to contain garbage, or incorrect data, the FreeMem statements are quite likely to go wrong. In most cases this is likely to cause a FreeMem twice guru to occur. One solution is to

ensure that you never pass this sort of routine an incorrect structure; the other is to change the first FreeMem line to read:

if (ml->block ram) FreeMem(ml->block_ram);

Quite a harmless change, only this time, if ml->block_ram is 0 then FreeMem can't be called. What this does not cope with is if the area that is freed was not allocated in the first place!

Before we leave this particular chunk of code, note the two commands in the while statement. The second one reads information out of a block of memory that was just freed in the line above. It's possible that another task might grab that memory between the two lines. Unlikely, but possible. The other problem might arise should Commodore ever put proper memory protection in, because the second line will fail because that memory no longer belongs to that task.

Although there have been a couple of things solved there, these were not the actual cause of the problem. The real problem lay in the routine that loaded all this data in

the first place and created the structures, because the author was starting with a structure which was created locally on the stack, filling it in, and then copying it to an area of memory. If it went wrong at all, it simply returned, but unfortunately still copied the structure to the destination memory. The result was that all the un-initialised fields (which didn't get filled in because something went wrong) contained garbage, and hence calls to the UnloadMessages routine would cause some spectacular problems.

An easy fix to this was placed shortly after the beginning of the routine.; it ensyres that the structure contents are all set to zero:

menset (ml, 0, sizeof (struct MsgLoaded));

This simply clears the entire structure.

The moral of this particular story is that any structure or variable created locally in a routine is allocated on the stack. This means that unless you specifically put something sensible in it, it will contain a random value, depending on what was on the stack. This will

cause reliability problems. If you want it to be initialised to zeros, you have to do it yourself. Global variables are not affected by this particular problem.

C makes it very easy for you to have bugs like the above. Even experienced C programmers fall foul of this sort of thing. The only way to effectively help reduce this sort of problem is to keep your code welldocumented and organised. At least then, if you do have a problem, you stand a chance of finding it!

JARGON

String - A special kind of C variable, actually created as an array of character elements. Strings are usually passed between functions by passing pointers holding their addresses.

Structure - A class of data storage in C whereby a group of primitive data types - for example, integers, strings and reals - are joined together in a particular order to form a user-defined type.



configured correctly by fitting the standard 512K expansion and testing the amount of Chip RAM available. If this still registers as 512K, then you will need to check Agnus and make some other modifications to the board (they vary according to the revision). It is more likely that you will need to contact the supplier of the extended RAM board and see if there is any way to utilise the extra 512K for Chip memory. I would suggest, though, you are probably better off leaving the machine as it is unless you have a lot of graphics-intensive applications -1Mb of Chip RAM is not necessary for the vast majority of users and you'll usually need a lot of Fast to start enough applications to make it worthwhile. MS

TRICKY POINT



My A1200 has a Power Computing accelerator with FPU and I would like to make more use of it. Am I correct in

thinking that applications have to be specifically compiled to use the FPU? I would also like to know if there is any way I can patch operations to use the FPU. Furthermore, do the maths libraries use the FPU, and if not can I replace them with something that does? Richard Marsh

Richard Marsh Birchington Kent

Generally speaking the FPU should be transparent in operation. Software can sense whether it is present and load the appropriate libraries, but this is "expensive" in code size. Large applications usually opt for manual use of the FPU by supplying two versions – one based entirely on integer maths and another using the FPU. For this reason, you can't patch the libraries – they are the way they are. **MS**

BREAK THE BANK



I am trying to use my Amiga to enter the Bank of Scotland HOBS system. I can get connected but seem to

receive a load of rubbish. I am using
ATalk III and Term 1.8 with the
correct parity and so on. Do I
require extra software to
communicate with HOBS? If so
what and where can I purchase it?
Gail MacTear
Isle of Lewis
Scotland

The answer is fairly simple: yes, you do need extra software to connect to HOBS. The Bank of Scotland uses a Viewdata system to run HOBS, which is the same as is used by Prestel

and other such message boards. To connect successfully you will need to use terminal software that is written for Viewdata use. There are two options available. The first is RubyView, which is a commercial program but you should be able to pick it up very cheaply if you can still find any dealers stocking it - it is very long in the tooth now. The second option is a public domain program called Supertext, which you can download from most Bulletin Boards with a healthy file area or purchase from a public domain library - see the directory of PD libraries on page 120. DW

FLICKER FIX



Having recently upgraded to an A4000/030, I was looking forward to a flicker-free interlaced

screen when using *ProPage 3* and the interlaced screens of *DPaint 4 AGA*. Disappointingly, there is still flickering evident. I have got the A1942 software update which came with the A1942 monitor, which I purchased at the same time as the A4000.

L Long, Gosport Hants.

There are a couple of things which could be causing you problems with the flickering. You have to tell Workbench that the flicker-free modes are available before it will make use of them. To do this, you need to have two files, "DBLPal" and "DBLNTSC", present in your Devs/Monitors drawer. To find out whether you have, this is what you do. In your Workbench partition on your hard disk, there is a Devs drawer. Double-click on this, and then on the Monitors drawer inside it. If it does not contain the two files mentioned above, you'll find them in the **Devs/Storage** drawer. Open this drawer and drag them across to the Devs/Monitors drawer, and then double-click on them to get them going. You then have to access the prefs program "IControl". Ensure

that the gadget "Mode Promotion" is ticked, and then save.

"ScreenMode" preferences, and change your Workbench to a DBL-PAL version of the mode. Then, re-boot your Amiga, and you should have glorious "Flicker-Free-O-Vision"! **TS**

WHAT'S INSIDE?



I am programming with DevPac 3 and would like to know exactly what is contained in the structures of so

many of the Library commands. For example, InitBitMap requires a pointer to a BitMap structure. Is there a book I could buy that would tell me this information?

John Lock,

Sittingbourn

Kent

You need to buy the Amiga ROM Kernel Reference Manual Includes and Autodocs, third edition, published by Addison-Wesley. The ISBN number is 0-201-56773-3. It contains all the structure breakdowns, and also a description of all the Library functions on the Amiga. If you want a proper explanation of these structures though, you'll need another of the ROM Kernel Reference Manuals. Libraries (ISBN 0-201-56774-1). This really requires some knowledge of C to understand, but it explains how to use the Library functions, and the structures involved. The Includes and Autodocs book costs around £20. the Libraries one is a little more expensive, but both are worth their weight in gold if you're serious about programming your Amiga. TS

AMIGA TOO BASIC



I have experienced the following problems using Workbench 3:

1. I am unable to load AmigaBASIC programs

directly from the hard disk by clicking on their icons. The message "unable to load your tool Amigabasic" appears. I have to resort to loading AmigaBASIC and

then entering the program name manually. Is there a more direct method?

 The speech facility in Wordworth does not work with Workbench 3. Is there any way I can use this useful facility.

Evan Morris Ripley Surrey

1. AmigaBASIC is rubbish - which is why Commodore replaced it with the infinitely more useful ARexx in Workbench 2 and above. I suspect this problem has arisen because the AmigaBASIC programs ("Projects") are set with the wrong path for their "Default tool". You can correct this by selecting the offending icon and choosing Icons->Information.... You then need to enter the path for AmigaBASIC in the area for the Default tool. For example, if AmigaBASIC is in a drawer called Basic on the main drawer of your hard drive, you could enter something like this: SYS:Basic/AmigaBASIC

This is a nuisance. There does not seem any reason why Commodore removed the text-to-speech that the Amiga was famous for (although it seems pretty rough by today's standards). You can reinstate it to Workbench 3 by obtaining a copy of Workbench 1.3 and copying the following files: Speak-handler (from the L drawer), Translator.library (from the LIBS drawer) and Narrator.device (from the Devs drawer). Remember that these drawers are all hidden on Workbench 1.3, so you will have to use Window->Show... All Files.

If you are feeling brave you may also want to create a "Mountfile" for the speak device as follows:

- Drag the icon "AUX" from the Devs/DOSDrivers drawer to the RAM disk.
- 2. Rename it "SPEAK".
- 3. Open a Shell window and enter the following command:

DELETE RAM: Speak

- Now enter the following command:ED RAM: Speak
- 5. When the ED window appears, enter the following short program (called a "Mount"):

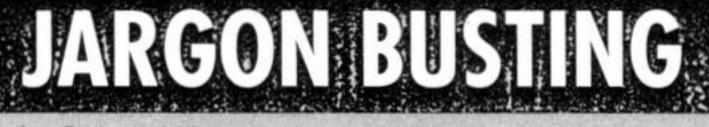
SPEAK: Handler = L:Speak-handler Stacksize = 600

Priority = 5 Globvec = -1

6. Save and exit from ED and then copy the SPEAK icon back to Devs/DOSDrivers. When you re-boot your machine you will have another device which you can use like a talking disk drive!

From AmigaDOS, the following produces some interesting results: COPY S:Startup-sequence TO SPEAK:

Try it and see! MS (13)



Basic – Beginners' All-purpose Symbolic Instruction Code is a highlevel programming language, much favoured by micro-computer users.

FPU – A Floating Point Unit is a chip that works with the CPU to carry out complex mathematical tasks. It speeds up the running of some programs, particularly 3D graphics-based ones.

HOBS – Home and Office Banking Service

ViewData – A page based terminal system, using large character blocks to form graphics and text, as used by Prestel. Now largely redundant.

OPEN ALL HOURS WELL, NEARLY!

9am-10pm Mon-Sat, 10am-6pm Sunday

SPECIAL OFFERS!!

2.5" Hard Drives for A600/A1200

40 MEG 80 MEG 120 MEG 250 MEG



£119 £189 £209 £349

Including lead, fixing screws & instructions

(These do not void your warranty)

210 MEG £299 340 MEG £419

A500/A500+ Hard Drives

80 MEG 170 MEG 254 MEG



£199 £269 £299

By the time you read this, Hard Drive prices may have fallen. Please phone for latest prices

PRINTERS & RIBBONS

Star LC20 £133.00
Star LC100 Colour£159.00
Star LC200 Colour£194.00
Seikosha SP1900 9 Pin Mono £109.95
Seikosha SL95 24 Pin Col£189.95
Star LC24-30 + Auto Sheet Feeder .£229.95
Star LC24-200 Colour£274.00
LC20/LC100 mono ribbon£4.50
LC100 colour ribbon£6.75
LC24 200 mono ribbon £5.50
LC24 200 colour ribbon£13.50
LC200 mono ribbon£4.50
LC200 colour ribbon£9.75

LEADS & CABLES

Printer	£3.99
Serial	£3.99
Null Modem	
Joystick Extender 3 metre	£3.99
Joystick/Mouse Extender	£3.99
Amiga to SCART	
Amiga to 1084S/8833	£7.99
Analog Joystick Adapter	
4 Player Adapter	

LOOK! LOOK! LOOK!

TRACTORFEED DISK LABELS

Now you can print your own professional disk labels!

500 Plain white disk labels on tractor feed, complete with FOUR disks of software and artwork.

Yours for ONLY £9.95

1000 Labels with software

ONLY £13.50

AMIGA HARDWARE

A1200 Race & Chase pack	£269.95
A1200 Desktop Dynamite	£329.95
CD32 + Oscar/Diggers	£289.95
A4000-030 2Mb Ram 170Mt)
Hard drive	£999.95
1084 S Monitor	£174.95
Cubscan 1440 Multisync	£399.95
External Amiga Floppy Drive	£49.95
A500 Internal Floppy Drive	£48.95
A500 512k Ram exp + Clock	£23.50
A500 1.5 Meg Ram exp	
A500+ 1 Meg Ram exp	£33.95
A1200 2 Meg Ram exp	£109.95
A500 Power Supply	

DISKS & LABELS

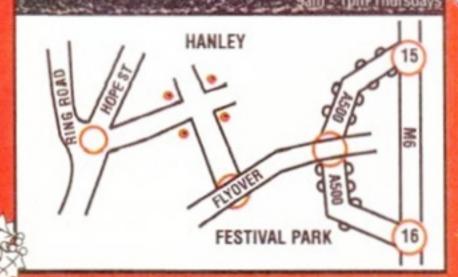
All disks are supplied with labels.
UNBRANDED DISKS are 100% error free.
In the unlikely event that any of our disks are faulty, then we will replace the disks AND reimburse your return postage!

postago			
3.5" DSDD Grade A	20.3	37 eacl	h
3.5" DSDD Grade B	£0.2	29 eacl	h
3.5" Rainbow	£0.4	14 eacl	h
3.5" DSHD	20.5	8 eac	h
3.5" DSDD Fuji (box of 1			
3.5" DSHD Fuji (box of 1	0)	£8.9	0
5.25" DSDD Fuji (box of	10)	£2.5	0
5.25° DSHD Fuji (box of	10)	£4.9	0
1000 3.5" labels		£6.5	0
1000 3.5" tractorfeed		£8.5	0

STORAGE BOXES

Most types are available for	3.5° or
5.25" disks.	
10 capacity	£0.95
20 capacity	
40 capacity	
50 capacity	£3.95
100 capacity	
80 capacity Banx drawer	£8.49
150 capacity Posso drawer	
200 capacity drawer	
CONTRACTOR OF THE PARTY OF THE	THE REAL PROPERTY.

VISIT OUR NEW SHOP Mon Sa



MISCELLANEOUS

Mousehouse	£1.80
Mousemat 9mm thick	£2 50
Diskdrive cleaner	
A500 Dustcover	
A600 Dustcover	
A1200 Dustcover	
Monitor Dustcover	
LC20 Dustcover	
LC100 Dustcover	
LC200 Dustcover	
LC24-200 Dustcover	
Roboshift	
Amiga Lightpen	£29.95
Optical Mouse	£32.00
Megamouse	£11.95
Megamouse II 400 DPI	£12.95
Point Mouse	
Altadata Trackball	
Crystal Trackball	£32.00
Zydek Trackball	
Zyfi Amp/Speakers	
Screenbeat Speakers	
Action Replay Mk III	
Midi Master	
Tilt/Turn Monitor Stand	
2-piece Printer Stand	£3.49
Metal Printer Stand	£8.99
A4 Copyholder Metal Angle Poise Copy Holder	£5.99
Metal Angle Poise Copy Holder	r£14.95
A500/A600 ROM Sharer	
V1.3 ROM	
Microperf Tractorfeed Paper: 500 she	
2000 sh	eets £13.00

JOYSTICKS

All joysticks have autofire feature

except those marked *.

Trigger Grip Models

Quickshot turbo £6.95

Python 1M £7.99

Jetfighter £12.00

Topstar £19.50

Intruder £21.50

Base Fire Button Models

Maverick 1M £12.95

Zipstick £12.95

Comp Pro 5000* £10.95

Comp Pro Extra £12.95

Comp Pro Star £12.95

Cruiser Multicolour* £9.95
AdvancedGravis Black £24.99
Advanced Gravis Clear £27.99
Comp Pro Star MINI £14.95
Aviator 1 Flightyoke £23.50
Handheld Models

Speedking £10.50 Navigator £13.95 Bug £12.00

ANALOG JOYSTICKS

TO SERVICE AND ADDRESS OF THE PARTY OF THE P	the little day the same of the same
These Joysticks will fit an	ıy Amiga
Warrior 5	£14.95
Saitek Megagrip 3	£19.50
Speedking Analog	£13.95
Intruder 5	£25.50
Aviator 5 Flightyoke	£27.50
Adapter to use any PC ana	log joystick
on an Amiga	ONLY £4.99

VISA

COMPUTER SUPPLIES 0782 206808 · Anytime

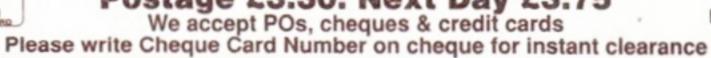
0782 206808 - Anytin

0782 642497 - 9.00am-5.30pm Weekdays 0630 653193/0782 320111 - Evenings & Weekends



9am to 10pm Mon-Sat, 10am to 6pm Sun

All items and offers subject to availability. E&OE Postage £3.30: Next Day £3.75



lease write Cheque Card Number on cheque for instant clearance

Due to the exchange rate, or manufacturer's changes or due to current RAM shortage, some prices may alter, either up or down, during the several weeks between going to press and the end of the month of issue. We would ask that prices be confirmed by telephone before ordering.

The best trade-in allowance, extra for peripherals and accessories. Trade in your old machine for a brand new A600/1200/4000/CD32 or even a PC.

After trade-in, equipment is checked and refurbished by our engineers and is then offered at bargain prices, complete with 3 months warranty.

A500s FROM £139 A1500s FROM £199

A600 SD/HDfrom 159 A3000sfrom 499	
CDTV	XT/AT BBoard50/91

OTHER ACCESSORIES - PLEASE ASK. *Acceptance of pre-V2 machines may be limited

A500/600/CDTV

STARTER PACK

A Must for new users! Microswitched joystick, "Get the Most from your Amiga" book, 10 Blank discs, 80 capacity lockable disc box, mouse mat, dust cover, Virus Killer.

A500+ and A600s come complete with mouse, modulator to connect to TV, or monitor lead as required, all cables, manuals, operating discs and utilities

DESCRIPTION OF THE PROPERTY OF			
AS STANDARD	ALONE STARTER	WARR- ANTY	EXTRAS
A500+ 1MB CAPTAIN PLANET, AS CARTOON CLASSICS CAPTAIN PLANET, THE SIMPSONS, DPAINT III*	£ £ 179.99 194.99 194.99 209.99	- 5	Extra IMB
A600 -	174.90 189.90		m 4
A600 SD SILLY PUTTY, F1 GRAND PRIX, PUSHOVER, DELUXE PAINT III*, 700 CLIP ART SET	194.99 209.99	12 month at home	MB PCMC
A600 HD 20	269.99 284.99	3 =	E35
EPIC 40 EPIC, ROME, MYTH, TRIVIAL PURSUIT,	319.90 334.90		169
PACK 64 AMIGA TEXT, DELUXE PLUS 85 PAINT III", 700 CLIP	349.99 364.99		* A
ART SET	389.99 404.99		PCMC
A600 HD 80	365.99 379.99		IA E
120	415.99 429.99	= 5	109 £45
210	569.99 584.99	base	
CDTV MULTI MEDIA AUDIO DISCS/ CD PLAYER, KEYB'D, FDRIVE, MOUSE, REMOTE CONTROLLER, CADDY, WELCOME DISC, FISH DISC	229.99 244.99		Brickette £45
CBM 1084 SD + LEADS	178.90	1 year	O.P.
CBM 1940 LEADS. IDEAL FOR AGA	269.99	1 year	Mo
Philips 8833 II T & SWIVEL £10	209.99	1 year at nome	rier
Star LC100C TOP VALUE 9 PIN COLOUR PRINTER	149.99 159.99	lyear	iP Monitor to TV Converter – £99
Citizen 240C 24PIN COLOUR	252.90 262.90	2 year	99 VI

Return to base HD versions are SD units fitted with top quality 3rd party drives and come with install disc + full documentation. *DPIII needs 2MB for animation on HD models.

NO OTHER DEALER CAN BEAT **OUR CREDENTIALS**

- Multi-million company with 9 years experience in Commodore product and
- Commodore trained staff are friendly and helpful and are parents, multimedia,
- educational, games, programming or technical specialists (usually more than one!) Open 9-6 pm Monday to Saturday and 10.00 am to 4.30 pm Sundays PLUS
- December late nights on Thursdays (St Albans only) for convenient shopping.
- Callers welcome for advice and demonstration at our 1600+ sq ft High St. Town
- Same day despatch for most orders received by 5.30 pm; express am and
- Saturday services available
- Hardware carefully handled and delivered safely and reliably by caged, insured, top name courier service
- Pre-despatch testing on Amiga systems Free 30 day courier collection and delivery of NEW replacement.(except product with on-site maintenance)
- Hotline support and in-house engineers
- Upgrade and trade in offers to keep you up to date
- Exceptional after sales service
- BFPO and export welcome NOT JUST ANOTHER MAIL ORDER COMPANY

HERTS AL3 5DG TEL: (0727) 856005/841396 THE GALLERY ARNDALE CENTRE LUTON BEDS LUI 2PG TEL: (0582) 457195/411281

A4000/30 & 40

A4000/30: AGA Chip Set + 68030 processor, 68882 25/50 MHz co-processor option, 256,000 colours from 16.6M, scan doubling for flicker free display, Mouse, Amiga 3.5"/1.76 MB 3.5" drive, Hard Drive as below, Amiga DOS 3.0 system and utilities, Next day on-site warranty A4000/40: As above, but featuring the blistering 68040 processor, with full floating point facilities NOT EC version. UK models with on-site warranty...NOT imports!

wullulity	HOT IIII		Company of the contract of the		
TRADE	BLE	A4000	A4000 /40		
HD SIZE MB	1+1MB SUBTRACT £70	2+2MB STANDARD VERSION	2+4MB SUPER EXP. VERSION	2+4MB	EXTRAS
80	most se	965	ADD 2+41 + one expan chips	1889	Extra 4MB (al Same d
120	- 3.Z	1039	ADD £80 • ADD 2 + 4 MB version come + one 4MB chip of fast expansion to 16MB. Whichips of fast RAM, which expansion of only 8MB	1915	a 2MB for 2+2 versions 3 for 2+4 versions £159 bscan 1440 recommended by werranty £39.99, extr
160	G - 1 + 1MB ous AGA s/w subtract £70	1079 SPECIAL	- AD ersion co chip of to 16MB. 6 16MB. 6 16MB. w	1959	or 2+2 ver 4 versions 440 recomm anty £39.9
240	- T	1149	ADD £80 comes wind fast RA MB. We do MB. We do M, which girly 8MB.	2139	versions E
340	- 2 €	1219	6223	2299	£159 • £159 • extra 1
540	es. If 2MB prices		bd £80 • ADD £80 comes with 2MB chip RAM of fast RAM, for on-board b. We do not fit two x 2MB which gives on-board 8MB.	2459	ons £99 · Extra 159 · Microvitec ded £399.99 · extra 2 yrs £99.99

A4000/30 CO-PROs 68882 25 MHz ADD £79 68882 50MHz ADD £159 Fitting FOC if purchasing A4000

HOW TO USE THIS AD

Exclusively from Hobbyte, you can choose your own Amiga and software combination and still benefit from the huge savings only available from package deals.

Want an A600 pack for small children? No problem!

A professional pack for music or programming? It's up to you!

ALL PRICES! CALL US!!

CD32 CONSOLE

Choose any* 3 CD discs (see software section) for £59.90 *up to £34.99 RRP each

CD32 SOFTWARE

Over 75 titles specially written for the CD32 should be in stock by Christmas (phone for list), including Syndicate, Zool 2, Jurassic Park, Chaos Engine, Robocod, many of which include a full CD music track alongside the game. About half of existing CDTV titles are compatible. CD32 will also play normal music CDs and CD+G discs

CD32 Standard warranty is 12 months return to base.

12 months on-site warranty £39.99 Extra 2yrs on-site warranty £69.99

CD12 Console (with Oscar AGA, Diggers +Joypad FREE)

CD32 + FMV Card as above

£465

AVAILABLE NOW!

Full Motion Video module for CD31 £189.99

COMING SOON

(with Free Music Video Disc).

Floppy drive, Keyboard, Mouse CD12 for A1200

WITH ANY

COMPUTER

CHAOS ENGINE, SYNDICATE. PINBALL FANTASIES, **NICK FALDO'S CHALLENGE GOLF ADD E19.99** OR LEMMINGS. SIMPSONS, CAPTAIN PLANET, PLUS D PAINT III

& GFA BASIC ARR CLARE

A1200

1200 2MB	269
1200 +20MB HD	379
1200 +60MB HD	439
1200 +80MB HD	469
1200 +00MB HD	509
1200 +207MB HD	549
Extra 4MB +	
clock fitted ADD	£200

**CBM APPROVED HARD DRIVES Full legal installation/utility disc and documentation and come with CBM onsite warranty service.

DON'T FORGET YOUR STARTER PACK! ADD £15

SPECIAL Deskjet 500C and Starter Pack with any Amiga

COMPILATION PACK 4 (lop games)

FREE WITH

NIGEL MANSELL

TROLLS AGA AND

WORKS PLATINUM Isee Home App. Pack below OR DESKTOP

DYNAMITE PACK Wordsworth 2 AGA Deluxe Paint 4 AGA

Oscar AGA + Dennis, ADD £49 (1200s Limited

While Stocks Last

THE HOT LIST **GREAT** individually

packaged games,

BETTER THAN THE

REST !!

(previous RRPs up to

£39.99 each)

ANY 10 £29.99

Or see packs across

Thunderbirds (7yrs+) ‡ - 92% AF

Silly Putty - 90%+ lots of mags

Elf/Toki/Puzznic (counts as 2) #

Paperboy II ‡

Die Hard 2

Colossus Chess @

Challenge Golf

Battleships classic board game

Graeme Souriess Soccer

Neighbours

Frankenstein ‡ @

Captain Planet

Silkworm Helicopter @ 93% (U

Tog Team Wrestling

Edd the Duck # Stack Up #

Lemmings 92% AF

Round the Bend ‡

Fist Fighter, Sporting Triangles

92% AA@

World Cricket

Bart Simpson

Spiderman/Cptn America ‡ @

Rrcade Trivia

Xenon - C+VG Game of the Month

Blade Warrior - A Power, AF, AAction

superb reviews

AWARD WINNERS

(counts as 2)

‡ PARTICULARLY SUITABLE FOR

Space Ace, Kick Off, PipeMania, Populuos

ONLY £285

Hobbyte are famous for their packs, allowing you to choose what you want, whilst still benefitting from package deal savings. Remember, a bargain is only a bargain when you like what you get! So, if you aren't Wild, Weird or Wicked, Sleepwalker sends you to sleep, Space Ace leaves you feeeling empty and Paradroid does worse, if Basic basically isn't you, exercise your options and get real value for money from Hobbyte

TRAMPY'S AND NODDY'S PACK

Fun and educational for 2 to 11 years (Some help may be required

Noddy's Playtime OR Big Adventure

OR Merlins Maths

The Shoe People

OR Counting

Clip Art pics

Hobbyte Primary

SPECIAL WITH AMIGA

8 magical learning games at 3 levels, PLUS Junior Art pack, keyboard overlay and map 6 National Curriculum oriented games, stage 2, 7 to 11

6 games with Trampy and friends, 6 years and under.

OR Fun School 2 The "Fun School" suite have wan every award going. 5/6 wonderful animated games, 3 to 11 years, specify age. Fun School 3 or 4 The loveable extra terrestrial entertains 4 - 7 year olds and OR ADI Jnr Reading helps towards achieving National Curriculum levels 1, 2+ 3

Pics inc. children, Fairytale + Legend characters, Sport, Deluxe Paint II + 700 Cartoons, etc.

Containing 10 fun while you learn games

Educational PD Pack

Simple games, or those with very easy levels. Even the Hobbyte 30 Easy youngest will be able to use some of these Children's Games Pack

SERIOUS USER'S PACK

Interested in music, programming and graphics? Then this pack is for you!

Easy Amos

OR AMOS Professional ADD £10 for this option

Hobbyte AMOS PD Greats

Deluxe Paint III, plus 700 Clip Art pics

MIDI Interface OR AmigaVision

THE programming language. Wonderful manual is simple and entertaining - ideal for complete novices. 97% AF rating - the second highest rating EVER given. Learn to professionally create your own

games, utilities. Loads of sample progs included Dozens of utilities, Protracker music modules, example programmes that no AMOS programmer would be without.

Create your own designs to incorporate into your AMOS progs MIDI Recording Studio & If you have a MIDI instrument, this is everything you

need to compose and edit your music Powerful presentation and production tool

STARTER PACK

A must for new users! All you need in one value pack

WITH AMIGA

Make working copies of Workbench and other original applications discs as soon as you get them Check discs regularly, especially if sharing with friends Helps prevent dirt/dust collecting on mouse contacts

Plus Microswitched Joystick, 80 cap. lockable disc box, Dust Cover

HOT BUG GAMES PACK

The top-selling Hobbyte Hot Lot pack now includes the ultimate joystick !!!

£59

"THE BUG"

Virus Killer

Mouse mat

10 "Hot List" Games The GREATEST!

80 Prog. Hobbyte PD Greats Pack II 10 blank discs, mouse mat, 80 capacity lockable disc box, plus dust cover

The only joystick ever to be given a Gold rating 92% AF, positive single-handed action, small and lovely! See listing to the right for current HOT LIST, or phone for latest changes. Children's games available.

Includes top games like Battlecars, Star Trek, Computer Conflict, Megaball, dozens of arcade classics, board classics and 'shoot-em-ups', Utilities, Word Processor, Spreadsheet, Database + Desktop Publisher and the ultimate virus killers - a must for every Amiga owner!

HOME APPLICATION PACK

Perfect for all Home Office needs

Virus Killer Disk. 80 Prog. Hobbyte PD Greats Pack - see 'Hoffest Lat Pack' The Works Platinum Deluxe Paint III* with animation + 700 Clip Art pics Digita Home Accounts Any Two Hot List Titles

SPECIAL WITH AMIGA

£49

spreadsheet, 'Sideways' utility, database, graphics + comms module Keep track of credit card and bank accounts, budgets, etc

WP with UK spell chck, Thesourus

CHILDREN (MAY NEED HELP) @ NOT A1200 COMPATIBLE TITLES MAY VARY

*DPIII needs 2MB for animation on HD models.

years a major player in Amiga Mail Order, Hobbyte also boast extensive expertise and experience pecification and support of multi-machine and specialist systems. Hobbyte have been recommended and trained by Commodore and successfully won major orders and support contracts from Landon Boroughs, MOD, educational establishments etc. We are pleased to be placed on tender lists.

This expertise is available to all our customers.

AMIGA SPECIALISTS STAR GOLD DEALER CDTV CENTRE PHILIPS APPOINTED DEALER

STOP PRESS! Desktop Dynamite AGA pack (see 1200 box) £69 with Amiga £79 alone

MONITORS/ACCESSOR	IES
(BM 1084SD + leads + 2 games	188.99
Philips UK 8833 MKII mon.+leads + on-site	199.90
Tilt + swivel stand for 8833	12.99
CBM 1940 dual sync .39 dpi AGA monitor + speakers	269.99
CBM 1942 dual sync .28 dpi AGA monitor + speakers	369.99
MICROVITEC CUB-SCAN 1440 14".28dp for 1200/40 variable scan rates between 15KHz (default on boot-up) and 40 KH modes in this range. With tilt and swivwl stand. "CUA BEST BUY Microvitec Cub-scan .28dp for 1200/4000 as above, but 20"	tz for all AGA "399.99 1039.99
EIZO 9060M Multi-Sync for 1200/4000 models	595.00
CBM 1936 Hi-res SVGA .28dp inc. tilt & swivel	259.99
NEC 4FG Multi-Sync	544.99
NEC 4FG Multi-Sync	1790.90
PiP View TV tuner+remote with sub picture for monitors	113.99
Zy-Fi Speakers	37.90
Zy-Fi Pro Speakers	57.90

The second secon	
FLOPPY DRIVES	
Zydec 3.5 external drive, daisychain + on/off	51.50
Cumona CAX 354 3.5 external drive, beige	56.50
PC 8808 with anti-click + Blitz back up and virus protector	59.90
PC 880B as above, Cyclone compatible	64.99
Dual drive as PC 880B	124.99
High density 1.76MB ext. drive for any Amiga (WB 2)	98.50
High density 1.76MB ext. drive for any Amigo (WB 2) + 10 HD Discs	
Power HD internal floppy for 1500/2/3 4000	94.90
Power HD internal floppy for500/600/1200.	94.90
A500 replacement internal flappy	64.99
A600/1200 replacement internal flappy	69.99
A600/1200 replacement internal floppy	69.99

HARD DRIVES/ACCELERATORS

ASO0 Internal 20M8 HD ASO0 Internal 60M8 HD ASO0 Internal 80M8 HD

A500 Internal 120MB HD

184.99

279.99 339.99

1500/2000	
GVP HC8/II 40MB	
GVP HC8/II 80M8	289.90
GVP HC8/II 120MB	374.90
GVP HC8/II 213MB. G Force 030 25MHZ 1MB.	479.90
G Force 030 25MHZ 1MB	384.99
G FORCE USU 4UMPL 4MD	004.77
G Force 030 SOMHZ 4M8	984.99
G Force 040 33MHZ 4MB Extra 2MB for above	
Trifecto SCSI 80MB HD	234.90
title to a seas to a title title to a title	234.70
3000/4000	
Fastlane SCSI II controller for 4000	299.90
DKB 40981 SCSI II	269.99
Syquest 44MB internal	289.90
Syquest 88MB internal	359.90
Spare Syquest 44MB cortridge	69.50
Spare Syguest 88M8 cartridge	99.50
A4000 130M8	159.99
A4000 170MB	169.99
A4000 Z14M8	199.99
A4000 260MB	
A4000 340MB	
A4000 450MB	
A4000 525M8	599.99
	AUUE13
500	
A530 1MB 40MB	392.00
A530 1MB 80MB	
A530 1MB 120MB	
AS30 1MB 213MB	693.99
A530 68887	104 00
GVP HD8 42M8	
GVP HD8 80M8	296.99 394.99
SOME HOR REFURBS AVAILABLE F	9413 MOS
	199.99
AJ7V ZWMO	177.77

asterpieces. Also 24 bit

re-recorded - inc deck controlls

36.90

otosope video is frame

**	Trifecto SCSI 80M8 HD	289.99
	A570 for 2.04 1MB 500	139.99
	A600/1200	
	GVP 85 MB HD 600/3200	274.99
	GVP 1230 030 accel for 1200	239.90
	GVP1230/40MHZ/4MB 68882	
•		479.99
	M1230 XA 40MHz	269.99
	M1230XA 40MHz 4MB	429.99
	M1230 XA 50MHz 4MB	519.99
	Microbotics VXL30 25MHz	219.99
	VXL 30 40MHz	339.99
	2MB Burst RAM for above	179.99
	A600/1200 HD UP	GKADES
	SELF	CBM APPROVED
	FITTING"	(BM APPROVED FITTING" ed) (with on-site)
	(on-site invalidate	ed) (with on-site)
	20MB85	
	40MB 139 175 175	
	60MB175	199
	80/85MB179	249
	120/127MB 215	329
	240/250MB349	499
	INTERNAL CLOCK	POA
	240/250MB349 INTERNAL CLOCK with cable & disc ADD \$14.99 for	Hobbyte fitting
	**Including FREE courier collection	& delivery
	1200 OVERDRIVE EX	
	Overdrive 35 40M8 HD	187.50
	Overdrive 35 8GM8 HD	247.50
	Overdrive 35 170MB HD	317.50
	Overdrive 35 220/260MR HD	337.50
	Overdrive 35 340MB HD	417.50
1	Overdrive 35 540MB HD	POA

DCTV. 376.99 GVP IV + VIU-S 965.99 GVP IV + VIU-CT. 1255.99 ON! Impact Vision 24. POA HARLEQUIN 32 BIT FRAMEMAKER BOARD 16.7 million colour photo realistic display o real time 24 bit animation Optional Alpha Channel - superimpose high quality graphics onto live signal, or smoothly blend point images • Optional Double Buffering - 2, 24 bit SUPPORTS: TV Paint, Vlab, Calligari, Sympatica, Ad Pro, Real 3D + others H1500 1.5MB. £929 *H2000 Plus H2000 2MB + Alpha. £999 "H4000 Plus .. H3000 3MB + D/Buffer .. £1099 FREE V lab Framegrabber HACOO AMR + Alpha +D/Ruffer \$1279 with Harlequin Plu

	Alpha +D/Butter £12/9		
Genlock	1199	"Plus versions inc. Genlock, extra screen resolutions + modes, 4 Alpha Chanel	en + more
MAYAN	PICASSO 24 BIT GRAP	HICS CARD Cord Lite	99
OK	FILLULU 24 BIT GKAPHI	CS CARD	
10.7	Lineari Manara) di nddia hiii	er, IMB exp to 2MB video RAM, full multiple screen + AREXX, support.	15
Supports leading gr	aphics packages/applications. 	6070	
Similar to Piccolo bu	ut with 4MB video RAM, progr inc. 110MHz clock. With FREE	ONTROLLER £ 1489. ammnable resolution to 1600 x 128 TV Paint Jar.	30, bu
PEGGY MPEG VIDEO	CARD	£479. devices and replay in real-time thro	99
Amiga! Use integra	ted genlock to overlay Amigo	graphics for sophisticated titling and	speci
Near SVHS quality,	16.7M colours, MPEG tools +	videas, or games with live video to library functions, 25 frames/sec pl	layboo
YC Output module i	for Peggy	£129 £349	.99
		2347	.77
OPAL VISION (fo 24 bit board v2+ 0	r 3000/4000) Ipol Paint, Opal Presents, Opal	Hotkey, Opal AminMATE589.	.99
IF YOU HAVE PURC	CHASED OPALVISION, YOU MA	IY HAVE RECEIVED VOUCHERS AGA	INST
THE FOLLOWING N	IEW PRODUCTS., WHICH WILL	BE ACCEPTED BY HOBBYTE IN PAR	(T
Video Processor for Video Suite for On	or Opel Vision WITH VOUCHE oal Vision WITH VOUCHERS	RS	
Care Bata C	I o her worm unit	FUEDE	00

£1579

647.99 329.00 395.00 489.00

V lab 24 bit real time digitiser 1200/600/500 V lab 24 bit real time digitiser 1500/3000/40 V Lab 4000/3000 int SVHS	00 int
G Gate 386sx 25MHz	386 Bridgeboard199.99

Scan Rate Converter for OpalVision WITH VOUCHERS... Retina 24 bit graphics card + 1MB + VD Paint Retina 24 bit graphics card + 2MB + VD Paint Retina 24 bit graphics card + 4MB + VD Paint

SCANNERS & DIGITISE	RS
Epson GT 6500, 600dpi 24 bit A4 inc. Scan s/w	779.00
Epson GT 8000, 800dpi 24 bit A4 inc. Scan s/w	
Power Hand Scanner, 400 dpi, 64 Greyscale, Powerscan software	
Power Hand Scanner as above, V3 for 1200/4000	104.99
OCR software for Power Scanner	
Power Colour Hand Scanner	219.49
Sharp JX 100 A6 Scanner + scanlab s/w up to 18 bit	469.99
Summa Sketch II A4 with s/w/A3 Tablet Digitiser	9/529.99

34.95

LEISURE TOP SELLERS

AV88 Harrier Assault

Blade of Destiny24.49
Body Blows Galactic AGA.23.90

B17 Flying Fortress......22.99

..27.49

14.99

Alien Breed II AGA.

Battle Chess...

GRAPHICS / CAD Aladin 4D	TV Paint 24249.90	Merlin's Moths
Aladin 40213.99	TV Paint Junior	Paint & Create
AmigaVision17.90	Visto Pro 3	Spelling Fair
Art Expression AGA134.90	Vista Makepath24.99	Any Noddy See also software
Art Dept. Pro 2.3A134.90	X CAD 200090.50	See also software
AdPro Prof Conversion48.99	X CAD 3000249.99	UTILITIES/LAN
Brilliance133.90	X CAD 2 to 3 upgrade149.99	AMAX II Plus
SPECIAL £140 OFF		Ami back
Caligari 2494.90	VIDEO PROD/TITLING	Ami back Tools
Caligari Broadcast 3396.90	A TIUDU T IT LUIIII TE "200"10	Amos 3D
Cine Morph29.99	Adorage48.50	Amos the Creator.
Deluxe Paint IV53.99	AmigaVision	Amos Compiler
Deluxe Paint AGA62.99	NEW-Broadcast Titler AGA	Amos Prof.
Disney Animation 56.90	Super High res239.90	Amos Prof. Compi
Distant Suns	Broad T Font EnhancerPOA	Easy Amos
Essence 44.50	Broad T Font PackPOA	Blitz Basic 2
Expert Draw	Deluxe Photolob	Incomment of the Party of the P
Gallery 39.49	imagemaster159.99	CanDo 2.5
Image FX 157.90	Montage 24 AGA -titling +	Cross Dos v5
Imagine v2149.99	grahics for Opal Vision and	CygnusEd Pro 3.5
Image Master AGA 139.90	maget Vision POA	Directory Opus 4.
Intro(AD Plus63.99	mpact Vision POA Morph+ 138.99	GB Route +
Marah + ton of the range	Pro Video Plus 137.99 Scenery Anim 4 £57.99	GFA Basic
package at £138.99, Cinemorph at £24.99 (RRP 49.99)	Scenery Anim 4£57.99	SAS/Lattice C
Cinemorph at	Scroller 59.99	Ountry book
£24.99 (RRP 49.99)	TV Record189.99	Quarter back Quarter back Tools I
Pixel 3D Pro119.95	TV Show Pro51.39	
ProDraw 368.50	TV Text Pro79.50	PEGGER -
ProDesm AACA POA	Video Studio 3115.95	Vital for graphics-or
ProDraw 4 AGA POA Real 3D Classic 78.90	Video Director	Fully integrated JPI
Real 30 v2 304 00	Video Effects 3DPOA	enormous hard disc
Scala SOO HVT 64 40	Video Master49.49	100M8 of framest
Real 3D v2	Vidi Amiga 12 V274.50	compress to under
Scala MM200 Supp. AGA.274.99	AIDI OLLEN -	gives JPEG capabili
Scala Pro MM300 AVAII322.90	Vidi Amiga 12 with	programmes that o
Sculpt Anim.4DNOV 198.99	MEGOITHER MUSTEREYF. TU	support JPEG, such
Spectra Colour57.99	YILL I & NOUL THING HATTER I JAY 77	AGA, so they con lo
SYMPATICA II	Vidi 24 Real Time222.90	files.
Do your animations slow down	Video Timelapse VTL -	Amiga DOS 2 and
in real time? SII will turn them	creates stunning timelapse	AREXX, 24 bit IFF,
into smooth 25 frames/sec	sequences - flowers opening	and Ham 8 Suppor

motion etc., record trigger inc. deck controller h/ware.329.90

Software only.....

EDUCATIONAL

e He e e	10.99	APPLICATION	
Spelling Fair	16.99	Arena Accounts	82.50
Any Noddy	16.99	Excellence 3	89.90
Any Noddy See also software packs		Final Copy V2	
		Carl Waiter	00.00
UTILITIES/LANGUAGE	5	Final Writer	
AMAX II Plus24	49.99	Kind Words III	17.90
Ami back	39.90	Maxiplan Plus v4	17.90
Ami back Tools	39.39	Mini Office	37.49
Amos 3D	21.49	Pagestream 2.22	62.90
Amos the Creator	30.95	Pagestream v3	219.90
Amos Compiler	10.40	AF GOLD WINNER	217.70
Amor Prof	22.00	Occupation 2 ACA	41 00
Amer Oral Campiler	24.00	Pagesetter 3 AGA	41.70
Amos Prof. Compiler	29.77	Pen Pal 1.5	28.50
Edsy Amos	22.47	Pers Finance Man +	29.50
Blitz Basic 2	49.90	Professional Page 4	1 AGA
		RATED as the current to	
Cross Dos v5	73.30	package by the indepen	
CLOSS DOS AS	19.75	magazines, 94% AF	110 40
Cygnusta Pro 3.5	07./3		
Directory Upus 4	43.90	SPECIAL ProPage 4 &	ProDraw
CygnusEd Pro 3.5	32.99	3 -professional illustrate	or's Both
GFA Basic	8.99	for Only£	159.99
Gigamem	47.50	Protext 55	POA
SAS/Lattice C2	55.99	Protext 55	17.90
Quarter back	39.49	Saxon Publisher	177.95
Ocumetric Inner Took Dalonia	EO 00		
MODIAL DOOR LOOP DEMIXE	34.44	Superbase Personal 4	104.90
	59.99	Superbase Personal 4	214.99
PEGGER -		Superbase Pro 4 V1.3	214.99
PEGGER - Vital for graphics-users!	79.95	Superbase Pro 4 V1.3 Typesmith	214.99 122.90
PEGGER - Vital for graphics-users! Fully integrated JPEG utility	.79.95 gives	Superbase Pro 4 V1.3	214.99 122.90
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s	.79.95 gives	Superbase Pro 4 V1.3 Typesmith	.214.99 .122.90 44.90
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will	.79.95 gives ovings -	Superbase Pro 4 V1.3 Typesmith Works Platinum	.214.99 .122.90 44.90
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB.	.79.95 gives ovings - [Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB.	.79.95 gives ovings - [Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100M8 of framestores will compress to under 10M8. ' gives JPEG capability to programmes that don't othe	.79.95 gives ovings - [Snoop'	Superbase Pro 4 V1.3 Typesmith Works Platinum MUSIC AD 10 12 Studio 16 Sampler	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100M8 of framestores will compress to under 10M8. ' gives JPEG capability to programmes that don't othe	.79.95 gives ovings - [Snoop'	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. gives JPEG capability to programmes that don't othe support JPEG, such as DPAII	.79.95 gives dvings - [Snoop' erwise NT IV	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so	.79.95 gives dvings - [Snoop' erwise NT IV	Superbase Pro 4 V1.3 Typesmith Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files.	.79.95 gives ovings - [Snoop' envise NT IV ve JPEG	Superbase Pro 4 V1.3 Typesmith Wordsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space is 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + sor files. Arniga DOS 2 and 3 compa	.79.95 gives dvings - [Snoop' erwise NT IV ve JPE6	Superbase Pro 4 V1.3 Typesmith Wordsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To	.79.95 gives dvings - [Snoop' erwise NT IV ve JPE6	Superbase Pro 4 V1.3 Typesmith Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space is 100MB of framestores will compress to under 10MB." gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support.	.79.95 gives dvings - [Snoop' erwise NT IV ve JPE6	Superbase Pro 4 V1.3 Typesmith Wordsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To	.79.95 gives dvings - [Snoop' erwise NT IV ve JPE6	Superbase Pro 4 V1.3 Typesmith Wordsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space is 100MB of framestores will compress to under 10MB." gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support.	.79.95 gives dvings - [Snoop' erwise NT IV ve JPE6	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB." gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support. Fast, seamless background operation	.79.95 gives avings - [Snoop' envise NT IV ve JPEG tible oaster	Superbase Pro 4 V1.3 Typesmith Wordsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface Mirocle K'board/Tutor.	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space is 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + sor files. Arniga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support. Fast, seamless background operation True Print 24	.79.95 gives avings - [Snoop' envise NT IV ve JPEG tible oaster	Superbase Pro 4 V1.3 Typesmith Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface Miracle K'board/Tutor. Rombo Megamix Mstr	
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Amiga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support. Fast, seamless background operation True Print 24 VIDEO TAPE BACKUP	.79.95 gives divings - I Snoop' erwise NT IV ve JPEG tible ooster	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface Miracle K'board/Tutor. Rombo Megamix Mstr (see offer with Vidi	214.99 122.90 44.90 38.99 38.99 41.49 25.90 104.99 67.90 59.90 23.90 19.95 27.99 12)
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Amiga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support. Fast, seamless background operation True Print 24 VIDEO TAPE BACKUP UTILITY	.79.95 gives divings - Snoop' erwise NT IV ve JPEG tible ooster	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface Miracle K'board/Tutor. Rombo Megamix Mstr (see offer with Vidi Stereo Master	214.99 122.90 44.90 38.99 38.99 38.99 41.49 25.90 104.99 67.90 59.90 23.90 19.95 277.99 27.99 12) 26.99
PEGGER - Vital for graphics-users! Fully integrated JPEG utility enormous hard disc space s 100MB of framestores will compress to under 10MB. ' gives JPEG capability to programmes that don't othe support JPEG, such as DPAII AGA, so they can load + so files. Amiga DOS 2 and 3 compa AREXX, 24 bit IFF, DCTV, To and Ham 8 Support. Fast, seamless background operation True Print 24 VIDEO TAPE BACKUP	.79.95 gives divings - Snoop' erwise NT IV ve JPEG tible ooster	Superbase Pro 4 V1.3 Typesmith Wardsworth AGA Works Platinum MUSIC AD 10 12 Studio 16 Sampler Audio Engineer +2 Audio Master 4 Bars & Pipes 2 Clarity Sampler Deluxe Music Const II GVP DSS PLUS Megalosound sampler Midi Interface Miracle K'board/Tutor. Rombo Megamix Mstr (see offer with Vidi	214.99 122.90 44.90 38.99 38.99 38.99 41.49 25.90 104.99 67.90 59.90 23.90 19.95 277.99 27.99 12) 26.99

16.99

16.99

Xcopy Pro..

APPLICATION

Campaign	22.99
Campaign	.16.49
Elite I	22.90
Epic	*9.99
F) Grand Prix	*24.99
Gunship 2000	24.99
History Line	21.69
Elite II Epic F1 Grand Prix Gunship 2000 History Line Indiana Jones Lemmings 2	23.99
Lemmings 2	18.90
Micro Machines	18.90
Monkey Island II	23.99
Putty	*12.99
Robocod AGA	15.69
Sensible Socrer	15.95
StreetfighterII	17.49
THUNDERBIRDS!!	.12.99
Their Finest Hour	5.99
Tryini Pursuit	*9.99
Wing Commander	19.49
Zool	15.99
*Price applies only with	Amiga
hardware purchase	
CD DISCS	RP.
CD DISCS All CDTV titles 15% off I	£479
CD DISCS All CDTV titles 15% off I	£479
CD DISCS All CDTV titles 15% off Pandora 2,000 Clip Art & 99 Sou	£479
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ²² DISCS	£479
CD DISCS All CDTV titles 15% off I Pandora 2,000 Clip Art & 99 Sou CD ³² DISCS Loads available - Phone	£479
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ²² DISCS Loads available - Phone including:	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ³² DISCS Loads available - Phone including: lurassic Park	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ³² DISCS Loads available - Phone including: lurassic Park	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ³² DISCS Loads available - Phone including: lurassic Park	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD ³² DISCS Loads available - Phone including: lurassic Park	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna c/Overkill Super Putty AGA Sensible Soccer NAGA	£479 inds
CD DISCS All CDTV titles 15% off In Pandora	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna c/Overkill Super Putty AGA Sensible Soccer NAGA	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna'c/Overkill Super Putty AGA Sensible Soccer NAGA Winter Super Sports Zool II SPECIAL - ANY 3*	£479 inds
CD DISCS All CDTV titles 15% off In Pandora	£479 inds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna'c/Overkill Super Putty AGA Sensible Soccer NAGA Winter Super Sports Zool II SPECIAL - ANY 3* "up to 34.99 RRP	£479 mds
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna c/Overkill Super Putty AGA Sensible Soccer NAGA Winter Super Sports Zool II SPECIAL - ANY 3* up to 34.99 RRP BOOKS	£479 mds27.9927.9021.9011.9018.9021.9021.90
CD DISCS All CDTV titles 15% off It Pandora 2,000 Clip Art & 99 Sou CD*** DISCS Loads available - Phone including: Jurassic Park Lotus Turbo Trilogy Luna'c/Overkill Super Putty AGA Sensible Soccer NAGA Winter Super Sports Zool II SPECIAL - ANY 3* "up to 34.99 RRP	£479 mds27.9927.9021.9011.9018.9021.9021.90

	90000
GENLOCKS/MODEMS	100
	- 8
Rendale 8802 (1200 compat)139.99 Video Pilot v3301094.94	88
Rendale 8802 FMC 159.95 Rocgen+ 1200 compat 158.50	-
Rendale 8802 SVHS/8860469.99 Roopen Rockey119.50	63
Harna Genlock 292	100
Hama Genlock \$290689.99	120
GVP G-Lock148.90 Supra Fax Modem148.90	1993
SUPRA 2400+ FAX/MODEM	100
With Your Fax, 2400 Data Fax Software, Atalk 3	100
With 9600 Fax, 2400 Data Fax Software, Atalk 3 Comms S/W, Modern Leads & Power supply £148.99	100
SUPRA 14440 FAX/MODEM	100
SUFRA 14440 FAX/ MUDEM COTO OO	- 6
As above, but up to 14,400 Fax/Data£279.00	V
Rocgen plus Rockey Bundle £239.90	V
kocgen plus kockey Bundle	
	83
ACCESSORIES & DISCS	No.

ACCESSORII	ES & DISCS
A500/600/1200 printer centre28.99	Alien/Batman/T2 Joystick10.99
A500/1200 control centre34.90	Bug Joystick11.99
A600 control centre27.90	CDTV Keyboard54.99
Brickette CDTV Joystick adapt 39.99	Zy-Fi Speakers37.90
10 Blank DS/DD discs in box4.99	Zy-Fi Pro Speakers57.90
10 Blank DS/HD discs6.99	50 Blank DS/DD discs
A520 Modulator29.99	50 Blank DS/HD discs27.99
THE RESERVE THE PARTY OF THE PA	AND ASSAULT

	EXPA	INSION	
A500 512k Ram Exp+Clock	21.99	PC 1208 bare	55.90
A500+ 1M8 exp		PC 1208 2MB	
A500+ 2MB, exp. to 8MB	149.99	PC 1208 4M8	214.90
A601	37.99	PC 1208 8MB	396.90
A600/1200 2M8 exp (card)	137.99	MBX 1200 bare	
A600/1200 4MB exp (card)	169.99	MBX 1200 2MB	
CDTV 1MB exp + Super Agrus	157.99	MBX 1200 4MB	
A500 Rom Sharer 1.3		MBX 1200 8MB	
A500 Rom Sharer 2.04	38.95	68882 25MHz for MBX/1208	
A600 Rom Sharer + 1.3	49.95	68882 50MHz for MBX/1208	
A2065 Ethernet Card	229.95	CBM 2.1 upgrade kit	
Blizzard 1200 4MB	159.90	Amitec 16bit OMB exp for 1200	76.90
Blizzord 1200 8MB	299.90	Amitec 16bit 4MB exp	
Blizzard 1200 4MB 25MHz	299.90	Chip fitting and board upgra	
Blizzard 1200 4MB SOMHz	POA	by our qualified engineers	POA

## Company of the control of the con		20.545	THE RESERVE OF THE PERSON	No. of Concession, Name of Street, or other
Citizen 120+D	urv	-	WE D.C	Service of the last
Citizen 120+D	MARRANIT	KIN	TERS	
Citizen 120+D	JAK MAKKILLEM			WITH
Citizen 120+D	WITH CITIZETY ALONE		ALONE	
Stor LC20				
Citizen 90 mono				
Citizen 90 colour	Citizen 90 mone* 144 A	0		
Citizen 124D	Citizen 90 colour" 154.4	0	Epson Stylus 800 249.90)
Star LC 100 9 pin col	Gitzen 1940 174.9	0	Citizen Projet II228.90)
Panasonic KXP2180 col. 159.90 Star LC200 col. 184.99 Star LC 24-20 II. 218.49 Star LC 24-100 24 pin. 173.49 Star LC 24-200 col. 209.99 Star LC 24-200 col. 248.49 Panasonic KXP 2123 col. 209.99 Epson LQ 100 179.99 Epson LQ 100 259.90 Epson LQ 870 469.90 Epson LQ 1170 569.90 Gitizen \$200 24" 184.99 Gitizen \$200 24 col* 199.99	Stor IC 100 9 nin col 149 9	0 0	HP Deskjet 510 249.90)
Star LC200 col. 184.99 Star LC 24-20 II 218.49 Star LC 24-100 24 pin 173.49 Star LC 24-200 209.99 Star LC 24-200 col 248.49 Panasonic KXP 2123 col 209.99 Epson LQ 100 179.99 Epson LQ 870 259.90 Epson LQ 1170 569.90 Gitizen \$200 24 col* 199.99	Panasanie KYP2180 cal 150 0	0	HP Deskjet 500cg/3295.90)
Star LC 24-20 II	Stor I (200 col 184 0	0	HP Deskjet 550C3 495.9	0 0
Star LC 24-100 24 pin	Stor I C 24-20 II 218 4	o .		
Star LC 24-200	Stor 1C 24-100 24 nin 173 4	0		9 0
Star LC 24-200 col	Stor IC 24-200 209 9	0 0	Conon BJ 200	
Ponasonic KXP 2123 col 209.99 Epson LQ 100 179.99 Epson LQ 570 259.90 Epson LQ 870 469.90 Epson LQ 1170 569.90 Star SJ 48 198.99 Star SJ 144 519.90 Epson LQ 24 col 199.99 Gitzen S200 24 col 199.99 Gitzen S240 Color 199.99 Color Co	Stor LC 24-200 col 248 4	0		
Epson LQ 100	Panasonic KXP 2123 col 209 9	9 -	Capan PI 220 A2 A40 0	2
Epson LQ 570		0		
Epson LQ 870	Epson LQ 570	0		
Epson LQ 1170	Epson LQ 870469.9	0	Star SI 48 198 9	i cu
Gtizen S200 24"	Epson LQ 1170	0 _	Star SJ 144 519.9	Ó
Gitizen \$200 24 col*199.99 Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240* Gitizen \$240*	Gtizen S200 24*184.9	9 -		
110700 1700 187 10 466 11096 266 66	Gtizen 5200 24 col*199.9	٥	OHALTY OF OF	0
	Gitizen \$240" 187 9	0	ADD LACED SOO O	
Citizen \$240C col* 233.90 < CITIZEN LASED 6000 POA	Gtizen \$240€ col*233.9	0 <	CITIZEN LASED ADDD POA	0
Citizen \$24x col*	Gitizen \$24x col*325.9	0		0
310f LC24 - 3U COI			Proposonie KYP 4430 A89 0	0
3101 LC24 - 300 Cot			Stor 15 5 Incar 560 00	1
Gitizen col Note. Printer IIIPOA HP Laserjet 4L	Citizen col Note. Printer III PO	A		
HP Laserjet 41289.90				
Welsh Character Set available on request Star LS Sex Sppm 2 bin659.90	Walch Character Set medable se	mount	Stor LS Sex Soom 2 bin 659 96	1
for Citizen Swift 90,200 & 240 Sharp JX 9500 9ppm599.50	for Citizen Swife 90 200 8-2	AC		

If you've admired the saturated colours of the Mitsubishi and other thermal wax printers at exhibitions, but couldn't afford the £4000+ price tog, the Forge Primero is the printer you're looking

for. Less than a third of the price of the nearest rival

Primera offers: Photo-quality, rich bright colours Up to 4 times faster than ink jet Cost per page less than ink jet.

Complete with Amiga driver (Windows or Mac driver if preferred) and Amiga lead.

 A4, transparencies + T-shirt transfer poper printing £995.90

5Studio driver/Utility (WB 2 & above) highly recommended ADD £39.95

STARTER PACK: 500 Sheets A4 paper, Amiga to printer lead, Universal Printer Stand & Driver with Print Manager

NO DEPOSIT CREDIT AVAILABLE (subject to status), 29.8% APR, written details on application. All major debit cards

accepted, no surcharges.

ORDERING: TELESALES NO: 0727 856005 FAX: 0727 834944

Same day despatch for debit or credit card orders placed before 5pm subject to availability. Alternatively send cheque, postal order, bankers draft or official order (PLCs, Education and Government bodies only) to: Dept AS, Hobbyte Computer Centre, 10 Market Place, St. Albans, Herts AL3 5DG. Please allow 7 working days for cheque clearance. Subject to availability, despatch is normally within 24 hours of receipt of cleared payment. Prices are correct at time of going to press, however, we are sometimes forced to change them, either up or down. Please check before ordering. Additional services and different packages may be offered in our showrooms, and prices may vary from Mail Order prices. Personal callers are asked to quote this ad to ensure Mail Order packages are affered.

DELIVERY CHARGES: UK MAINLAND (NOT HIGHLANDS) Despatched by post, please check Small consumobles & software items charges when ordering Other items, except losers Next day courier service, £10 per box

Please enquire

Normal rate plus £15 Normal rate plus \$8

Offshore and Highlands

Saturday deliveries

Am next day

IN ADDITION WE OFFER THE FOLLOWING EXPRESS SERVICES:

NO DEPOSIT CREDIT FACILITIES Credit terms at 29.8% APR (variable) can

be arranged for purchases over £150, subject to status. Competitive leasing schemes are also available for businesses, including sole traders and partnerships. Just telephone for written details and application form.

TEC-NOL LTD LEEDS ☎ 0532 590020

Amigas

Amiga 600 with Games Pack	£189.99
Amiga 600 Wild, Weird, Wicked Pack	£225.00
Amiga 1200 Basic Pack	£285.99
Amiga 1200 30Mb HD-Commodore App	
Amiga 1200 85Mb HD-Commodore App	£489.99
Amiga 1200 125Mb HD-Commodore App	£549.99

Printers

Citizen 120D+ Citizen Swift 90 Colour	Special Offer £119.99
Citizen Swift 90 Colour	NEW £169.00
Citizen Swift 200 Colour	£205.00
Citizen Swift 240 Colour	£249.00
Citizen Swift 240 Colour Citizen Printers come with fre	ee printer lead, 250 sheets
of paper, 2 Year Warranty a requested).	and V2.0 Amiga Driver (if
C DILLOCK	1

Canon BJ10SX	£339.99
Star LC 100 ColourNew low price Star LC20 inc Free Printer Stand Star SJ48 Bubble Jet	£149.99 £134.99 £215.99
Deskjet 510 BlackNew Low Price	£276.12

Amiga Hardware

Amigariarane	410
A600 1Mb UpgradeSpecial Price	e £38.99
ModulatorsSpecial Price	
Mouse Mat	£3.99
Zydec External DriveSpecial Price	e £58.99
Zappo External DriveSpecial Price	e £58.99
Zydec External DriveSpecial Price Zappo External DriveSpecial Price Vidi 12 AGA for A600/1200 New	£78.99
Golden Image Mega Mouse & Mat	£14.99
Logic 3 Speed Mouse	£14.99
Addup Stereo Speakers + Vol. Control	£34.99

Ordering Information

Small Orders Add £3.00 P&P Large Orders Add £6.00 P&P (Next Day Delivery) Please Make Cheques/PO's Payable to TEC-NOL Ltd Send payments to TEC-NOL LTD, DEPT AS3, 194b NEW ROAD SIDE, HORSFORTH, LEEDS LS18 4DP





800sq.ft SHOWROOM SPECIAL LOW PRICES

Callers Welcome

A1200 Monitors

	£279.99 £379.99
Samsung Scart TV/Monitorwith Scart Lead	£169.99

Amiga CD32, the best CD Games Machine £294.99

Disks

Grade 'A' Bulk Disks	Branded Dyson Disks with labels			
10£4.89	10£5.80			
30£14.59	30£16.50			
50£21.99	50 (free disk box)£25.00			
100£38.99	100 (free disk box)£49.00			
200£72.99	200 (2x free disk box)£97.00			
	£192.00			
1000£329.00	1000£380.00			
	s 500£6.99			

Disk Boxes	
O Capacity Red or Blue	£1.50
25 Capacity Clear	£2.50
10 Capacity with Lock	£3.99
30 Capacity with Lock	£4.99
00 Capacity with Lock	£5.99
30 Canacity Banx Box	66.63

Dust Cove	ers
A600 Dust Cover	£3.99
A1200 Dust Cover	£3.99
Philips Monitor Dust Cover	£5.99
C (.	

Sonware	
Transwrite Word Processor	£34.99
Gunship 2000 - Game	£29.99
F19 Stealth Fighter Game	£13.99

Ink Cartridges & Refills

OC INCIIIIS	
Deskjet HP5 1626A Double Cap.Black	£22.50
Deskjet HP5 1625A Colour	£26.50
Paintjet HP5 1606A Black	£18.50
Epson Stylus 800	£10.50
Citizen Projet Black	£14.00
Canon BJ10/e/ex Black	£17.99
Starjet SJ48 - Black	£17.99
Deskjet Twin Refill Pack - Black	£11.99
Canon BJ10/Starjet Twin Refill - Black	£11.99
Deskjet Twin Refill Pack - Colour	£11.99
Canon BJ10/Starjet Twin Refill - Colour	£11.99
Please state colour required eg red/blue/yellow/gree	n/orange etc

MERRY CHRISTMAS TO ALL OUR CUSTOMERS OLD & NEW.....

OWNERS

Extra Fents Fer: Pre-Page 2.1, 3, 4, Final Copy II rol2, PageStream, Wordworth 2,

Great Stocking Fillers

hease Year Own Disks From Just £2.50 a Disk Select Another 3 Disks FREE

For Every 10 Purchased

B&T Forts...

78, Foresters Tower, Woodfarm Road, Headington, Oxford. AQ8 EXO (0865) 744578

From Our Catalogue Frem Just 300 each Each Disk Hes Its Own Printed Label isting The Feats On The Disi

......PLEASE RING OR WRITE FOR YOUR FREE CATALOGUE......

TWORKS CLIP A Original images for the computer. NOT public domain

Each disk contains between 115 and 270 original, high quality, images for use with Amiga Art, DTP & video programs - Deluxe Paint, Pagesetter, Pro Page, Pagestream, Wordworth, Penpal, Scala etc. 1. Pets 2. Castles, cottages & churches 3. Trees 4. Signs & symbols 5. Wild animals 6. Prehistoric life 7. Signs & symbols 2 8. Weddings & family occasions

9. Fishing & freshwater life 10. Signs & symbols 3 11. Christmas 12. Frames & borders



£7.99 each - 3 or more £7 each - Over 1900 images for only £84 - Inclusive of 1st class P&P



AMIGA COMPUTING - "Best Buy" CU AMIGA awarded * * * * AMIGA FORMAT 85



T 0469 588138

Please make cheques/PO's payable to ARTWORKS (Dept ASH) 1 Pond View, Wootton, Ulceby, S.Humberside. DN39 6SF

ANOTHER MONTH, ANOTHER DEADLINE ...

Have a good Christmas! Our best wishes to you and yours for a happy and prosperous 1994.



ISSUE 39 OUT NOW !!!

The job of any computer magazine is to inform and to educate - and perhaps occasionally to entertain. We at JAM take our jobs very seriously indeed. We understand that we have an obligation to inform you of new developments as quickly as possible, and, more importantly, we have a duty to get it right. Incorrect or incomplete information is worse than no information at all, so we make sure we do our research before passing on to you what we have learnt. The emphasis in JAM is on quality information.

Sometimes that information might be meaningless without a basic understanding of the concepts involved, so when necessary we ensure that we publish general background information that will help you to form your own informed opinions and compare them to those of our Amiga experts and the opinions of other reviewers.

We like to think of JAM as the piece that completes the Amiga jigsaw, enabling you to see the whole picture. Our readership has continued to grow for three and a half years now, so we must be doing something right.

STUDIO WILL ENHANCE THE OUTPUT FROM ALMOST ALL AMIGA SOFTWARE

Studio can make a real difference to the quality of your printouts. It's particularly strong when dealing with colour ... " Amiga Format, October 1993

"You need this software if you own a printer." CU Amiga, May 1993

"The quality really has to be seen to be believed!" Amiga Mart, May 1993

ORD	ER	FORM	AS	
	IN.	TROD	исто	

BLOCK CAPITALS PLEASE

1	(3 issue subscription + 3 back issues)	£10	(Europe £15)
4	(3 issue subscription + 3 back issues)		
1	6 ISSUE SUBSCRIPTION (Starting with the current issue)	£15	(Europe £20)
4	(Starting with the current issue)		
٦			(Europe £35)

(Starting with the current issue) STUDIO PRINTER SOFTWARE£49.95

(WB2+, supports all Desklets, Laserlets and compatibles, Ricoh LP1200, and most Epson compatible 24/48-pins) STUDIO LIGHT £15 (Europe £20) (Version of Studio with pre-set preferences for all DeskJets and

LaserJets, price includes introductory 6 issue trial to JAM) CANON DISK £15 (Europe £20) (Enhanced printer drivers for use with Canon bubble jets and

lasers, price includes introductory 6 issue trial to JAM) PANASONIC PLUS £15 (Europe £20)

(Enhanced drivers for use with Panasonic 9-pin and 24-pin printers, price includes introductory 6 issue trial to JAM) STAR DISK£15 (Europe £20)

(Enhanced drivers for Star LC 9/24-pin and SJ-48/144 printers, price includes introductory 6 issue trial to JAM)

I enclose a cheque/money order for £

NAME ADDRESS

POSTCODE Cheques and money orders

Send your order to:

DATE / /

made out to: JAM

Just Amiga Monthly 75 Greatfields Drive

Telephone 089 527 4449 Uxbridge, UB8 3QN Photocopy or use a separate piece of paper if you don't want to cut your magazine

ast month in our Address Book programming project, we integrated all of our user interface code into the main module, and dealt with some of the things that we are going to have to do in order to get the Address Book running from within the window. This issue, we'll actually be doing that, and getting our pretty window displaying record contents, as well as enabling us to edit existing records by simply clicking in the appropriate string gadget, entering the new field contents, and pressing <Return>. All the source code you need this month is on the cover disk, so load it up and let's get going. We've even given you DICE itself to load it into! (For how to get started with it, see page 12.)

DEALING WITH BUTTON PRESSES

We've already got the code written to enable us to detect that a button has been pressed. Last month's program simply put the button ID number on the screen so that we could see that something was happening. We can perform actions on this number in a variety of ways. One is to use IF statements, but by far the most efficient way of testing multiple values like this is to use the switch() command. We've already looked at switch() in the past, but this time we'll be using an additional feature. Our five control buttons - NEXT, PREV, SAVE, GOTO and SEARCH will need to be dealt with separately, but the other nine represent fields in our current record, so we could deal with them easily without the need for nine separate CASE statements:

```
switch(gad_pressed->GadgetID)
  case BTN_PREV:
    /* Previous code goes here */
    break;
   .. repeat for BTN_NEXT, V
SAVE, GOTO and SEARCH ...
   default:
    /* If the above cases didn't
get it, it goes to the default
bit! */
    break;
```

What is happening here is that the five control buttons are handled at the top of the program, and by a process of elimination anything else must be one of our string gadgets, so we use the "default" statement, which basically means "if none of the 'case' statements were used, do this bit". It can be quite handy in a number of circumstances, including error detection.

Since we can only ever have one record shown at any one time, what we'll do is create a few global variables, which dictate what's on screen:

record_changed = FALSE; /* Flag to indicate we made

```
changes */
long current_record
                       = -1;
   /* Current record, -1 if none
yet */
long total_records
                       = 0:
   /* Total records in file */
char record_data[RECORD_LENGTH];
   /* The actual record itself */
```

We'll use our first one.

record_changed, to indicate if the record on screen currently has unsaved changes. In future issues, we'll use this to show a requester saying something like "Data has changed - are you sure you want to move to another record without saving it?" (We'll be dealing with requesters next month.) The a return - keep typing next variable, current_record, is used to indicate the actual record number that is shown. or -1 if nothing is shown currently. The third,

The symbol *

means do not type

to the end of the next

total records, is calculated at the start of the program and tells us how many records there are in our file. It's quite easy to calculate. A better way to do it than this, however, is to hold this sort of information in an index at the start of the file. However, we're going to do it the easy way. We can simply open the file, find out how long it is in bytes and divide this number by the length of each record, and hey-presto, the number of records:

```
long total_records;
```

```
/* Open our file */
if (!(file_channel = Open •
("addresses", MODE_OLDFILE)))
 return NULL;
```

/* Calculate total records */ Seek(file_channel, 0, OFFSET_END); total records = (Seek(file_channel, 0, OFFSET_ CURRENT) / RECORD LENGTH);

Close(file_channel);

This enables us to put some basic error checking on the NEXT button to prevent the user from going off the end of the file. We're using a nice feature of the AmigaDOS Seek() function that it returns the position where it was in the file before you called **Seek()**. So if we seek to the end of the file, and then seek

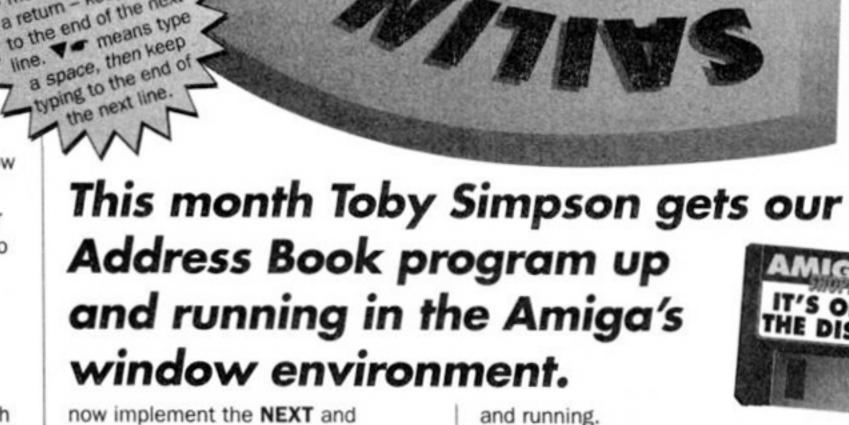
nowhere at all (OFFSET_CURRENT, zero bytes), we get the length of file.

Our last global, record data, holds the actual data for the current record itself. We will pass this to the

"write_record_data" and

"read record data" functions we wrote several months ago.

With this lot all sorted, we can easily



PREVIOUS button operations. PREVIOUS is really easy: we can simply reduce the current record counter by 1 so long as it is greater than zero, like this:

if (current_record > 0) V current record-;

When we've done this, we can then update the display by calling a new function we'll write in a while called show current record, which takes a pointer to where the record data will be and the record number itself.

Because we're reading in the total number of records, the NEXT button can be implemented in a similar easy way:

if (current_record < V (total_records-1)) ▼ current_record++;

Then we make a call to show_current_record, and we're off



The source code for our Address Book application being edited. You can just load it off the cover disk!

The other important button to implement is the SAVE one. This button will save any changes that you have made to the current record. Since we keep tags on both the record number and whether there have been any changes, this is also now very simple to implement particularly since we've already written a routine to save a named record to disk, "write_record_data":

IT'S ON

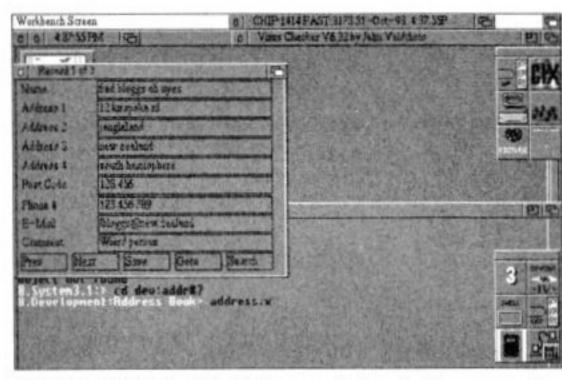
THE DISK

```
if (current_record >= 0 V
&& record_changed)
 /* Save any changes */
 write record data (record
_data, current_record);
 record_changed = FALSE;
```

The first thing we're doing here is

checking to see if there is a record to save, and if so, whether there have been any changes to save. Remember that we set current_record to -1 if there is no record displayed, and we set record_changed to TRUE (it's a boolean variable) if there are any changes. So, if the record is 0 or higher and there are some changes, we want to save it. We're using the and function, "&&", to do this. If there is something to change, we call our write_record_data routine to write the record straight to disk, and then set the record_changed flag to **FALSE**, because there are no longer any unsaved changes.

As you can see, it's all nice and straightforward. Perhaps the most complex bit that we'll have to do with our button result code is to deal with



Success at last – the first record showing on screen! There's still some way to go, though - stick with us...

the user pressing <Return> in one of the string gadgets, meaning that they've changed something. This code sits in our default: part of the gadget switch statement. It looks a little like this:

record_changed = TRUE;

/* Copy changed field across... */ field_offset = record_data;

for (loop = 0; loop < ▼ gad_pressed->GadgetID; loop++) field_offset = field_ offset + field_lengths[loop];

strcpy(field_offset, V ((struct StringInfo *)(window * _gads[gad_pressed->GadgetID] * .SpecialInfo))->Buffer);

The first thing we're doing is setting our record_changed flag - because there have now been changes. We then have a character pointer which we set to be equal to the start of the current record. We then want to find the offset into the record where the field to change is. We find this in the above "for(...)" loop. If, for example, the user pressed <Return> in the third line, then the offset would be equal to the lengths of the first two fields from the start of the record. So, since our gadget ID is equal to the field number, the above loop does the trick nicely.

Then we have a rather complex looking strcpy command. We've looked at **strcpy** before – it means string copy, and it works like this:

strcpy(destination, source);

Our destination is the calculated offset, and the source is the gadget data buffer which Intuition looks after. This updates the internal copy of the record according to changes. If we then pressed on our SAVE button, it would pick up that there are changes and save the data for us.

Because we have not yet integrated the "Create New Record" function into the program, this month the **SEARCH** button is temporarily tied to the original create_record() routine we wrote all those months ago. This at least allows us to add new records to our file and display the results.

The biggest new routine that we add this month is the one which displays a named record directly on the window itself. This is called after the NEXT and PREV buttons are pressed, and in

future versions will also be used after

GOTO and SEARCH to update the

window contents. We mentioned it briefly above when we talked about the actions of **NEXT** and **PREV**, and it's going to be called

show_current_record. The prototype for this function is this:

BOOL show_current_record • (char *record_data, V long record_id);

We pass it a pointer to where the record data is to be placed, and the record number we want to show. We already have these values defined, "record_data" and "current_record". Let's have a little look at

show_current_record:

char *field_offset; int loop;

/* Attempt to read the named record */ if (!(read_record_data -(record_data, record_id))) return FALSE;

** Before we alter the gadgets, we must remove them

RemoveGList(addr_window, V window_gads, -1);

** Now go through record, copying fields to string gadgets. field offset = record data;

for (loop = 0; loop < V TOTAL_FIELDS; loop ++) strcpy(((struct String Info *)(window_gads[loop] .SpecialInfo))->Buffer, V

field_offset);

field_offset = field_offset V + field_lengths[loop];

** Now they are updated, we can add them back and refresh the window */

AddGList(addr_window, Vwindow_gads, -1, -1, NULL); RefreshGList (window_gads, V addr_window, NULL, -1);

** Now show something sensible on our window title

sprintf(window title, V-"Record %ld of %ld", V= record_id+1, total_records); SetWindowTitles(addr_window, V= window_title, (UBYTE *)~0);

return TRUE;

This introduces a whole load of new intuition.library functions which we have not used before. This is what the function does:

- Read the record data into memory. Return FALSE if it was unable to.
- Temporarily remove our gadgets from the window. The manuals state that it is illegal to operate directly on the gadget structures when they're still attached to the window.
- 3.Loop around, setting each gadget string buffer with the appropriate field content. Note that we're using the same procedure we used before, to set field contents when the user pressed <Return> inside one of the string gadgets.
- 4. Add the gadgets back to the window, and tell Intuition to refresh them so that they look right.
- Change the window title to show which record we're showing and how many there are in total. This simply looks nice and gives the user some idea of what is going on.

Part 1 we've already done – we wrote a read record data some months ago - so we just call that with the appropriate parameters. The new Intuition functions we're using are responsible for the removal, updating and adding of gadgets to windows. They are very versatile, you can actually add or remove single gadgets, groups of gadgets, all sorts of things. It's best to consult the AutoDocs for the function to find out exactly what it can do. Finally, in part 5 we set a new window title.



NOTE: This is a common error! Note that the window_title string is a CAUTION global variable. This is

important. If we were to accidentally declare it locally to this function, then everything would go horribly wrong as soon as we exited it because any local variables are instantly eliminated. The next time Intuition chooses to update your window title, for example, your window becomes unselected, and then it will look to an area of memory which no longer contains any useful data. The result is a corrupted title, which looks messy. Do remember that anything that needs to remain intact after a function is used should either be correctly allocated in memory or declared as a global variable.

All that remains, then, is to integrate this lot properly into the

program and make the necessary changes to the prototypes file to add our new function definitions. Also, we're adding some #defines for the control buttons into address_book.h. A few variables have now had to be declared as external too, particularly the field_length array, so that other code modules can access them.

COMPILING AND USING THIS MONTH'S LISTINGS

The current source is on this month's cover disk, and was compiled, tested and run using DICE 2.06.21, freeware release. You will need the Commodore Includes in order to compile the program. If you need to get hold of the Includes, then send off for Commodore's excellent Native Developer's Toolkit. The address is:

Developer Support, Commodore Business Machines (UK) Ltd., Commodore House, The Switchback, Gardener Rd., Maidenhead, Berks., SL6 7XA

Send a cheque for £25 sterling made payable to "Commodore Business Machines (UK) Ltd.", and ask for the "latest Native Developer's Toolkit". The newest version of this toolkit, for Kickstart 3.1, should be available by about now. The Toolkit comes with the Includes, plus autodocs on disk, together with stacks of example code and useful debugging and programming utilities. Well worth the money.

Next month we'll be looking briefly at ARexx as a way of providing power to a program, then neatening things up by adding requesters to tell us what is going on, and then we'll explore the integration of creating a new record into the GUI.

Toby Simpson is available for electronic mail on CIX as "toby" and over the internet at "toby@cix.compulink.co.uk".

JARGON BUSTING

AutoDocs - The autodocs describe the operation of each of the Amiga operating system's individual functions. You can buy a book with this lot in, and they're also available on disk with Commodore's Native Developer's Toolkit.

GUI - Graphic User Interface. The term used to describe all the buttons, icons and windows on the screen, as a way of controlling programs. The Amiga's GUI is named Intuition.

Greased lightning!

Can it be true? A programming language with which you can produce super-fast games and real Workbench programs? Simon Green gets Blitzed by Blitz Basic 2.

ong ago, there was only one version of the BASIC language for the Amiga. It was called, appropriately, "Amiga Basic" and came free with Workbench. To many people who had upgraded to the Amiga from an old 8-bit machine, it seemed incredibly powerful - and there weren't even any line numbers! Alas, it was discontinued with the advent of Workbench 2, and, on a lot of tasks, it was painfully slow.

Next came HiSoft and GFA BASICs. These were much faster and more reliable than old Amiga Basic, and were great for writing OS-legal programs, but still didn't allow much control of the custom graphics hardware that had made the Amiga such a successful machine. There didn't seem to be any way in which the average user could create fastmoving graphics of the sort seen in commercial games, without resorting to learning C or assembly language.

Then AMOS arrived. It offered a full version of BASIC, but ditched the Amiga's Operating System in favour of its own fast, hardware-level routines. Now even beginners could write programs with scrolling, moving sprites, sound effects and music.

Now there's Blitz Basic 2. This

newcomer claims to be a real programming language with enough low-level control to make high-speed games a reality. Its forerunner Blitz Basic 1 was never truly released in the UK and was only really used by a dedicated cult of Blitz programmers. Blitz 2, however, deserves to reach a much larger audience.

A SPEEDING BULLET

So, how much faster is Blitz Basic 2 than AMOS? To test the comparative speeds of the two languages, I devised a simple benchmark program. The benchmark consists of drawing a number of bouncing balls on the screen. Each ball is an eightcolour, 16 x 16 pixel graphic (a "bob" in AMOS, a "shape" in Blitz). The screen is double-buffered to eliminate flickering, and the balls had to preserve the background graphics, as is usual in arcade games. The task was to see how many balls could be drawn and animated in a single video frame (that is, in a 50th of a second). I found that Blitz Basic could manage about 16 balls per frame, but, try as I might, I couldn't push more than about 8 or 9 balls per frame out of AMOS. However, I discovered that if I disabled multitasking using the

"Multi Off"

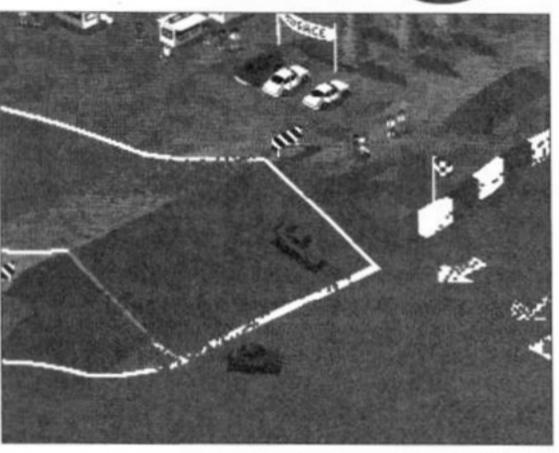
instruction from the Craft extension, AMOS could achieve the slightly more respectable figure of 11 balls per frame. But, I also found that if I switched off the run-time error-

checking in Blitz Basic, I could obtain a frankly obscene 30 balls per frame!

Obviously these figures aren't necessarily representative of the speed of the languages as a whole, and I don't claim these are the best possible values, but it does give a rough indication of the performance differences you can expect to find.

The first important thing to realise about Blitz Basic is that is a compiled-only language. Unlike AMOS, which is based on an interpreter, all Blitz programs must be compiled (that is, converted into machine code) in order to run. This has the obvious advantage that you don't need to buy an additional compiler in order to produce fast, stand-alone programs.

Blitz Basic being compiled-only is not as much of a disadvantage as it may sound, since Blitz comes complete with an interactive run-time



SkidMarks - a top-class racing action game, to be sure, but could it have been written in AMOS?

debugger. This provides most of the same functionality provided by AMOS's direct mode and monitor program, except it operates directly on the compiled program. You can stop the program at any point, and the debugger will open a small screen displaying the source code to the currently executing statement, plus a few lines either side. You can then step through the program a line at a time, examine the contents of variables and even execute commands directly. This can be an invaluable aid when developing and debugging programs.

Blitz Basic can operate in two modes – Amiga mode and "Blitz" mode. Amiga mode is the default and enables you to write conventional programs that make use of the operating system routines to open screens, output text and draw graphics. This is the mode you would use to write proper, multitasking Workbench applications. However, to obtain maximum performance, you can use "Blitz" mode, which disables multi-tasking and takes over the machine completely. This allows full and direct control over the Amiga's hardware.

At first glance Blitz Basic seems a much lower-level language than AMOS - that is, closer to the level of the machine. For example, to open a screen in AMOS, you simply specify the number of colours you need, and "LowRes" or "HiRes" to choose the resolution required. In Blitz, however, you need to set the correct bits in the viewmode parameter to select the resolution, and specify the number of bitplanes required.

Drawing bobs (blitter objects) and double-buffering (which is essential for smooth animation) in Blitz are also much more involved than in AMOS. For example, if you want to open a double-buffered screen in AMOS and draw some

VSTRGURGETED

Most of your time with Blitz Basic will be spent in Blitz's integrated editor/compiler environment - "Ted". The edit/compile/execute cycle is very fast - you just edit your program, select "Compile/run" from the menu, and in a short while (depending on the length of your listing,

obviously), your code is up and running. In fact, Blitz often seems to compile and run your program in the time it would take the AMOS interpreter to just test it! As you'd expect, programs can also be compiled to disk for later execution.

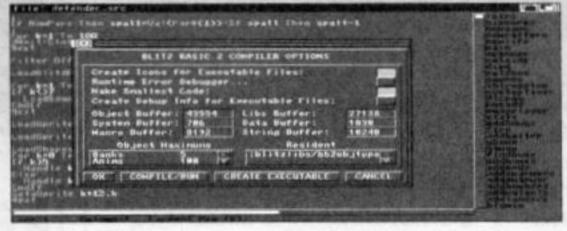
As an editor, Ted is perfectly usable, if a little

quirky. I was particularly annoyed by the way pressing <Return> inserts a new line below rather than above the current line, and the fact that it's impossible to delete a line by using <Backspace> or <Delete>. And it seems to refresh the screen more than you would have thought

was strictly necessary. Unlike the AMOS Professional editor, Ted doesn't allow multiple edit windows to be opened, which can make cutting and pasting code between programs a bit tedious. But I'm probably just being picky - you can always use your own favourite text

editor instead.

Ted does have some nice features - it automatically highlights recognised keywords in a different colour, and you can get it to list the main labels in your program in a column on the right-hand side of the screen for quick and easy access to different sections



Blitz's integrated editor and compiler, Ted. You'd better get used to looking at this screen...

of the code. The syntax of some of Blitz's commands can be a little complex, to say the least, but fortunately Ted includes a simple on-line help system that can give a list of the parameters of any keyword. It's still not really ideal for novices, but it certainly helps.

Open" to open the screen, followed by "Double Buffer" to double-buffer it, and then just use the "Bob" command to draw your bobs. In Blitz, you have to allocate two bitmaps, set up a "slice" and manage all the double-buffering and the drawing and erasing of the objects yourself (using Blitz's "Blit" commands). The advantage of this approach is that it is faster and gives you much more control over what is actually happening.

It's also good to see that Blitz allows IFF samples (8SVX format) to be loaded directly, which is still a big omission from AMOS. There is even a "DiskPlay" command that enables long samples to be played directly as they are loaded from disk.

A more unusual feature is that Blitz also operates as a fullyfunctional assembler. You can freely mix 68000 assembly language instructions with BASIC commands. This means that experienced programmers can replace timecritical routines in their programs with faster machine-code equivalents. It is even possible to set up your own interrupts that will automatically call a specified procedure on a regular basis. The compiler/assembler also provides all the features you'd expect, including conditional compiling and macros. In fact, in some ways Blitz Basic 2 feels more like a high-level assembler than a compiler as such.

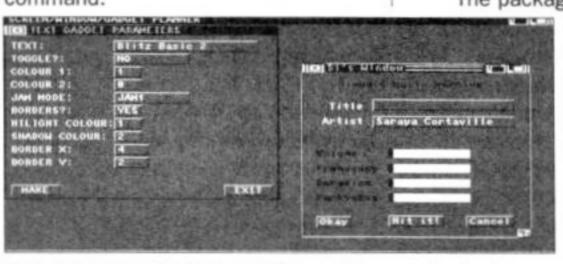
Blitz also borrows more than a few features from the C programming language. Probably the most interesting of these features are "NewTypes". These are the Blitz equivalent of C's "struct" data structures or Pascal's "Records". NewTypes enable new data types to be created by grouping together a number of different basic types. A NewType can be thought of as a record containing a number of different fields, each of which can hold a different item of data. This means that rather than using several different arrays to store all the data in your program, you can use arrays

The Blitz map editor enables you to piece together screens from a selection of small graphic tiles, saving time and storage space. I used to love Lego too...

of NewTypes instead. Neat.

Masochists will be pleased to hear that Blitz also includes a pointer type. Simply put, a pointer is a variable that holds the address in memory of an item of data (it "points" to the data). Pointers are used extensively in C to pass references to data between functions. So now you too can confuse people (and probably yourself) just as much as those clever C programmers do. On a more serious note, NewTypes and pointers also provide a useful method of representing and accessing the Operating System's data structures and libraries from Blitz Basic.

Another novel feature is built-in support for linked lists. Linked lists are an alternative method of storing data to conventional, linear arrays, and a more efficient one. They make some types of list processing much simpler and faster than if arrays were used. Lists in Blitz are allocated in a similar way to arrays, using the "Dim List" command. Items can then be added and deleted from the list very easily using single commands. The system automatically keeps track of the current item, and you can step through the list using the "NextItem" command.



Blitz Basic's IntuiTools utility enables you to design Intuition interfaces with your mouse, without worrying about any of those complicated commands.

These features together make Blitz Basic a much more concise, flexible and elegant language than some other versions of BASIC.

PROOF OF THE PUDDING

One of the other big selling points of Blitz Basic 2 is that it provides full support for the Amiga's graphical user interface, Intuition. Finally it is possible to write proper, multitasking

> Workbench applications in BASIC. Blitz includes commands for creating screens, windows, pull-down menus and all those gadgets we all know and love. The latest version of Blitz even includes support for ARexx, which enables Blitz to communicate with other programs, as well as a facility called BRexx, which allows you to control

other Intuition programs by fooling the system into thinking that the mouse or keyboard is being used.

Other interesting features include support for playing IFF (Deluxe Paint) animations, MED music modules, and synthesized speech using the Amiga's narrator device. However, support for AGA graphics is not yet complete. It is

possible to open AGA format screens under Intuition in Amiga mode, but although it is possible to set up 24-bit palettes in Blitz mode, AGA screens and shapes are not yet feasible.

Of course, in addition to these more unusual features, Blitz Basic also includes everything else you'd expect from a modern version of BASIC, including string handling, file input and output, procedures, functions, and all the control structures you could ever need, and probably a few you don't.

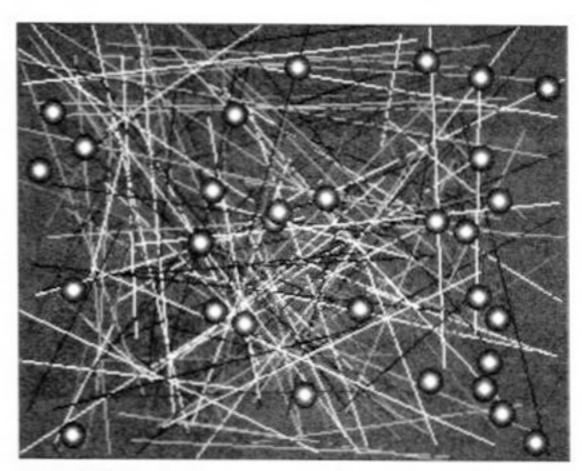
The package comes complete

with a selection of ready-compiled tools, including an Intuition interface designer called "IntuiTools", a Map editor called "MapEdit", and "ShapesMaker", which is for grabbing shapes from IFF pictures. None of

these appear to be documented anywhere, but it doesn't take long to figure out how to use them.

My only real concern about Blitz is that it seems to be quite unstable on some machines. I managed to crash it several times just trying to run the example programs. However, you have to remember than Blitz is still a relatively young product, and I'm sure that in time these bugs will be exterminated. The only other criticism I would make is that the documentation, although quite professionally produced, is somewhat lacking in details and explanations in places.

Of course, the biggest testament to the power of Blitz Basic is the quality and speed of the software that has already been written using it. Sure, there's been a few nice programs written in AMOS (most notably a certain game called Extreme Violence), but nothing that really rivals SkidMarks, Defender or Insectoids 2 in terms of professionalism and playablilty. And with Blitz's Intuition capabilities,



With Blitz Basic 2, you can animate this many bouncing balls every 50th of a second. Wow!

there's no reason why we shouldn't see some groovy Workbench utilities written in it as well.

I wouldn't recommend Blitz Basic for beginners or people of a nervous disposition. It is, however, ideal for frustrated AMOS programmers who reckon they've pretty much pushed AMOS to the limit, or for people looking for a proper, structured version of BASIC that can be used to write real Workbench applications. And it's also a very good stepping stone on the road to pure assembly programming.





Features

You name it, Blitz Basic has got it.

Tou name it, bit basic has

Documentation

Adequate, but a bit incomprehensible in

Ease of Use

some places.

A nicely-integrated programming environment, but the language itself

takes a bit of getting used to.

Performance

Unbelievably fast in Blitz mode – only

assembly language would be quicker.

Excellent. The price compares well with other programming language packages.

Overall rating

Value for Money

The best implementation of BASIC since AMOS, but not recommended for beginners.

Nexus Prom

Background Picture Sets

High Quality AGA Colour IFF Pictures, perfect for videotitling! Work in all Amiga Paint and Presentation Packages (DPaint, Scala, etc.)

(Also available for Pre-AGA Amigas on request)

Set One : Papers

Various paper types, including parchments, marbled, embossed.

Set Two : Fabrics

Varied fabric backgrounds including silks, cottons, leather, etc.

Set Three : Textures

Various textures including woods, stonework, etc.

Set Four : Travel

Including famous landmarks from around the world, perfect for use as chromakeyed backgrounds or for holiday video title backgrounds.

Set Five : Weddings and First Communions

Including parchment, scrolls, flowers, romantic backgrounds, etc.

Set Six: Introduction Pack

A compilation from the previous sets, ideal for new users.

Each 10 disk set is available at a cost of only £29.99 inc. P & P. or buy the whole range for only £130.00.

Send cheque or postal order made payable to: VIDEOWORLD, 8 Ardoch Gardens, Glasgow, G72 8HB. Telephone 041 641 1142 for more information.



1993/4



RIGHWAI

经验

£42.50

(6)3(11)(18

整直心器構造運

POOLSWIN

WITH ARTIFICIAL INTELLIGENCE THE LEGENDARY POOLS PREDICTION AID, Poolswinner, now has artificial intelligence. The latest version of the program, Poolswinner Gold, has the power to learn from the results of its

own predictions, constantly adjusting the prediction formula to MASSIVE DATABASE 22000 match database over 10 years.

 PREDICTS SCOREDRAWS, NO-SCORES, AWAYS and HOMES Predictions are based on many factors .. recent form, the massive database, league standing, goal scoring rates, and draw averages.

The user can adjust all parameters.

SUCCESSFUL Selec guarantee that Poolswinner performs significantly better than chance.

LEAGUE AND NON-LEAGUE matches are covered. Can be used for the non-league and amature matches often on the coupon.
 FULL LEAGUE TABLES (home & away) are automatically

generated by the program as results come in.

UPDATED WEEKLY. Poolswinner Gold is supplied fully updated with all league results from the start of the season

IMMEDIATE USE No need for tiresome input of previous results. All results are

already in the program - predictions can start immediately.
 PACKAGE CONTAINS disc, detailed operating manual and support literature.

Also available from Selec ...

COURSEWINNER V4 £36.50

THE PUNTER'S COMPUTER PROGRAM. With artificial intelligence. Uses past form, going, distance, speed ratings, prize money etc. Contains British course statistics - best jockeys, trainers, draw effect etc. Detailed analysis of all runners in a race, with profit. Sophisticated aid to successful betting, with a long pedigree.

POOLS PERM PLUS

Perm analyser and checker, complete with 5 years of coupon results and popular perms for analysis. Checks your weekly entry for winning lines, or tests your theories on results over the last 5 years. Reveals all the weeks a bet would have won, and the probable dividend.

(send for full list of our software)

Formats available:

IBM (35 or 54), AMIGA, ATARI ST / Falcon

All programs are supplied on disc, packaged with detailed instruction manual, and support literature. Prices are inclusive of VAT & delivery

Send cheque I PO for return of post service to ... Selec Software (Est. 1984)



Quality Japanese Citizen Mechanism



All you need in an Amiga External Drive:- Through Port, Extra Long Cable, Disable Switch, High Impact Slim Case. Suits any model. The £45 price includes both Postage & VAT - why pay more at a store!

PLUS FREE STARTER PACK OF DISKS IF YOU ORDER ON THIS COUPON

Inpholink Ltd., Front Street West, BEDLINGTON, Northumberland NE22 5UB

Quality Electronics Manufacturers Since 1975 Order Desk 0670 827480 Fax 0670 828666

Please send me an Amiga 3.5" External Drive straight away. (cheques should clear prior to shipping)
Name
Address
Post Code (delete as required)
l enclose a Cheque / P.O.s / Charge to my Access / Visa / Connect
Credit Card number
Expires



THE CENTRE OF TEC

WTS ELECTRONICS LTD, CHAUL END LANE, LUTO



Amiga 1200 Packs

- 32-bit 68020 Full power
- On site warranty
- Two Python joysticks
- Free Paint package software
- Mouse mat
- A1200 Standalone £274 A1200 with 20 MB £354
- A1200 with 40MB £399
- A1200 with 60MB £424 A1200 with 80MB £439
- A1200 with 120MB £509
- A1200 with 200MB £549



Amiga 4000 Packs

- · AGA Chip set
- 68030/40 processor
- Co-pro option
- 2MB/4MB RAM
- A4000 030 with 80MB HD & 2MB
- A4000 030 with 80MB HD & 4MB
- A4000 030 with 120MB HD & 4MB
- A4000 040 with 120MB HD & 6MB £1999

A1200 Dynamite pack

£899

£999

£1069

£228

€45 Simply add to pack price £284 **CD32**

A1200/A600 Hard Drives



- Easy to install upgrade kits
- Full instructions and cables where necessary
- All drives supplied with formatting instructions and software
- Free fitting available phone for details
- £85 20MB HD Upgrade Kit £135 40MB HD Upgrade Kit 60MB HD Upgrade Kit 80MB HD Upgrade Kit • 120MB HD Upgrade Kit £199 £329 200MB HD Upgrade Kit

A1200/A600 Memory Upgrades

- A1200 PC 1204 4MB + clock (Co-pro option) £198 £118 ProRam 2MB PCM-CIA A600/A1200
- ProRam 4MB PCM-CIA A600/A1200 £172 £34 ProRam 1MB A600
- A1200 Real Time Clock

Amiga 500 Hard Drives



High Quality GVP Hard Drives

	A500	A1500	
120MB	£429	£382	
500MB	£989	£942	
1CD	£1100	£4142	

Internal Hard Drives for A500

- Easy to install Full instructions
- ICD technology

£17

£36

£36

- £155 Pro Internal 20MB hard drive £245 Pro Internal 40MB hard drive £295 Pro Internal 80MB hard drive
- £325 Pro Internal 120MB hard drive £405 Pro Internal 200MB hard drive

Monitors



- Philips 8833 MKII Monitor £189
- Commodore 1084s
- · When purchasing with an Amiga deduct £10 from above pricing
- £5 Dust cover for the above

SVGA / Multisync Monitors



- 14"/20" Super high resolution colour display
- Professional IBM compatibility
- Complete with cable
- Full UK warranty

£174

- Tilt & swivel stand
- A1200 SVGA Monitor (Displays high productivity modes)
- A1200 SVGA + Monitor (Medium resolution) £269 displays all modes high and low)
- A1200 SVGA + Monitor (High resolution) displays all modes)
- £364
- A1200 SVGA plus 20" Monitor (Displays) £1044 all modes ideal for DTP, CAD etc)

Workstations



- Ergonomically sound
- Facilitates up to three external floppy drives
- · Made in the UK
- Strong and robust
- Aesthetically pleasing
- · Keep your desk neat and tidy
- Supplied complete and assembled with free mouse mat
- A500 Workstation
- A600 Workstation

A1200 Workstation

Workstation Coverall dust covers

Peripherals



- £5.99 100 Capacity lockable disk box Squick mouse £13.99
- Mouse mat
- Jet Fighter joystick Apache joystick
- Python joystick Zipstick joystick
- Screen Beat speakers
- A500/A600/A1200 Dust covers A500 Modulator
- £36
- £5



- £1.99
- TDK high quality DSD (10) disks £9.99 Computer Mall DSD (10) disks £6 £13.99 £6.99
 - £9.99
- Supra 2400 Modem Supra Fax Plus Modem
- £14.99 £29 Zi-Fy speakers £36 £4.99 £36 Rendale 8802 FMC Genlock £169 £89 £148 £358 Supra v.32 BIS Fax Modem

Scanners

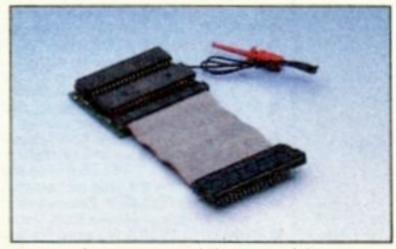


- Allows image processing in a useful and unique fashion
- Comes complete with operation manual
- One of the fastest growing applications for home and professional users
- High specification coupled with cost effective pricing

Power Hand Scanner

- 64 greyscales 100-400 DPI
- Thru'port to printer
- · Fully compatible with Delux Paint 4, etc.
- Advanced software
- Power Hand Scanner v3.0 Power Hand Scanner Colour
 - £96 £229

Pro ROM Swapper



- Swap between Kickstart chips
- Fits A500, A500+, A600, A1500
- Auto swapping via keyboard control
- Flexible cable allows the swapper to work in conjunction with accellerators etc.
- Simple to fit full instructions
- Pro ROM Swapper
- £18
- Pro ROM Swapper + 1.3ROM £37

Pro ROM Swapper + 2.04ROM£40

Workbench 2.04 plus manuals£49

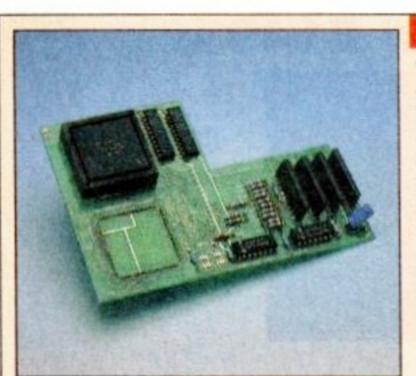
HNICAL EXCELLENCE

N, BEDS, LU4 8EZ TEL (0582) 491949 (6 LINES)

198

Est. since

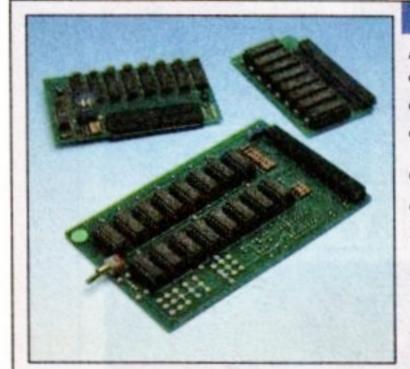




Pro Agnus 2MB

Provides a full 2MB of Chip Memory for the Amiga 500 and A1500/2000 • Designed and built in England • Supplied with 8375 Obese Agnus • Includes 2Mb Memory on board in the form of low power Zips • Allows the processing of elaborate animation and sound sampling • Provides the same max. chipmemory as the A3000/A600 &500+ • Increases addressable memory space from 9MB to 10MB • Complete with full instructions and flying leads • British made

• Pro Agnus 2MB £139
(Free fitting available - Phone for details)



A500 Memory Expansions

A500 Pro-RAM 0.5 Meg. Upgrade

- Allows 1MB software to run
- Chip memory compatible
- British made
- Without clock

£16

With clock
 A601 for A600

£19

A500 Pro-RAM 1.5 Meg Upgrade

Gives a full 2Mb of memory £74

A500+ 1Mb Meg Upgrade £29.95

High Current Power Supply

- Allows the addition of peripherals without damage to computer or power supply
- Why risk damaging your expensive kit when one simple investment will ensure total peace of mind now and for the future
- Switch mode design
- Full crow bar projection

A2000 Power supply unit

British made

• British made	
A600 Power supply unit	£44.95
A500 Power supply unit	£44.95
A590 Power supply unit	£44.95
A1200 Power supply unit	£54.95

Cumana 3.5" External Drive



- High Quality
- · Renowned and proven reliability
- Top notch specification
- Anti-click

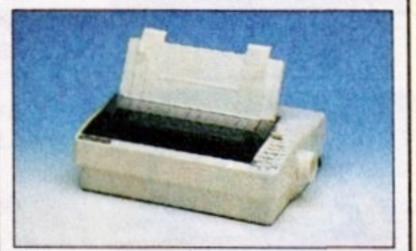
£99.95

- Long moulded cable
- Slimline design
- High impact plastic

1		
١	Cumana external drive	£57
1	Cumana external drive	
	+ 100 capacity disk box	£60
ì	Cumana external drive	
	+ 100 disk box + 20 blank disks	£66
	• A500/A500+	

Internal replacement disk drive

Printers



- High quality premium range of Amiga printers
- Two year manufacturers warranty.
- Complete with cable to Amiga 500
- Citizen registered for Dealer plus service
- Swift 1200+ £129
 (9 pin, 80 column, 144 CPS draft, 30 NLQ, 4KDB Buffer)
- Swift 90 Colour £168 (9 pin, 80 column, 216 CPS draft, 54 LQ, 45dB quiet mode)
- Swift 200 £186 (24 pin, 80 column, 216 CPS draft, 72 LQ, 43dB quiet mode)
- Swift 240 Colour £259 (24 pin, 80 column, 240 CPS draft, 80 LQ, 43dB quiet mode)
- Swift Pro Jet £299 (80 column, 50 nozzle print, 360 CPS draft, 120 LQ, HP

emulation 8KB buffer, 3 fonts, vertual lazer quality)

Chips and Spares



- WTS have sole distribution rights from Americas biggest Commodore chip distributor
- £78 Workbench 2.04 Kit (includes manuals, disks & chip) £24 Kickstart 2.04 £29 Kickstart 1.3 Kickstart ROM Swapper £18 (Swap between Kickstarts) Fatter Agnus 8372 £29 Obese Agnus 8375 £39 High Res Denise £24 1MB x 9 Simms (3 chip) £29

£14

£9

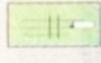
1MB x 4 Zips

8520 CIA

SALES HOTLINE 0582 491949 (6 LINES), 0480 471117 (24HR), FAX ON 0582 505900



Credit Card ordering by phone is easy. Simply phone our sales hotline quoting your credit card number., expiry date, name and address and the products you wish to order and we'll do the rest. Alternatively write the above details on your letter when ordering by post.



When ordering by post in cheque form please write your cheque card guarantee number on the reverse of the cheque and send along with your order. Postal Orders are also accepted.



NO DELIVERY CHARGES TO UK MAINLAND. MINIMUM ORDER AMOUNT £15.00.

Should you wish your order to be sent by courier service please add £5. This method includes Comprehensive insurance.

£46



WARRANTY: One year return to base (excluding chips).

ONE YEAR EXTENDED WARRANTY: Available on all products (excluding chips) at 10% of purchase price when ordering.

WHERE TO FIND US!

Head Office WTS Electronic Ltd Chaul End Lane Luton 0582 491949 No.16 Downstairs
The Harpur Centre
Bedford
0234 218228

No.6
Priory Mall Shopping Centre
St. Neots

0480 471117

49 Railway St.
Hertford
0992 503606

Computer Mail Dunstable 84 High Street North

84 High Street North Dunstable Bedfordshire 0582 475747

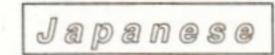
All prices quoted or products stocked are subject to stocking levels and availability. WTS cannot be held liable or supply reimbursement for force majeure, or items, which are out of stock due to demand or low stock at its suppliers which may result in delayed delivery or non delivery, payment with order, please allow 28 days for delivery. WTS reserve the right to ammend prices, revise packs, specifications and or substitute product without prior notice at any time without liability upon itself. E & OE

Concornal Calo - Concor

Audio Gallery

Educational Software * Foreign Languages

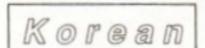
Chinese







English

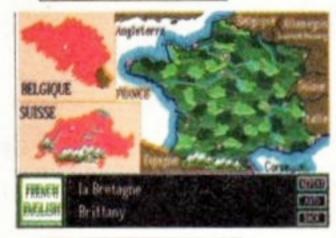






French

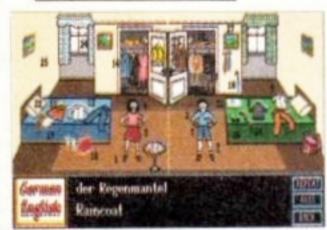


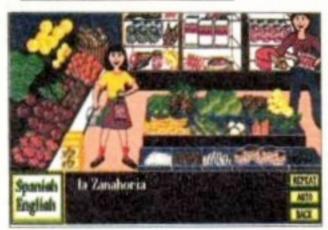




German







(Italian and Portuguese also available, Dutch in Nov, '93)

Testimonials from Audio Gallery Users:

"It is really more than just a dictionary. I would have bought this much sooner had I known how in depth it is. As a Foreign Language teacher, I really appreciate it. This is a very high quality product...one of the first computer FL programs to use current FL methods." Ankeny, IA

"Wowee! The Spanish Audio Gallery Demo Disk is wonderful. Words can't describe how pleased we were with the sample. What a great great learning tool. Please let us know when you have available Spanish Audio Gallery #2... Thanks again for such a wonderful product. You have a winner on your hands." Bartonville, IL

Reviews from Amiga Magazines:

"A truly original idea is a rare thing...Fair-Brothers, Inc. in the US has apparently achieved the impossible by releasing a product that stands alone in the market, offering the answer to a question that's hitherto been ignored...the mastering of a foreign language... it could become the perfect learning tool for all ages." Amiga Computing

"If you're just starting to learn a foreign language, the Audio Gallery series is indispensable as a learning tool...if you're planning a trip abroad, a good phrasebook and the appropriate Audio Gallery title will give you everything you need to know to survive in the language. I highly recommend the whole series." .info

"There has been nothing like this on the market before and I recommend it for language teachers and anyone (who) wishes to add to their langguage skills." Peter Furey, Western Australia

"The program makes use of the Amiga's excellent sound capabilities and provides digitized voices of native speakers - a most expedient way to learn a foreign language." Amiga World

- * All words and phrases Fully Digitized Speech
- * Includes Dictionary, Pronunciation Guide, Quizzes
- * 25-30 Topics such as Weather, Numbers, Food, etc.
- * 7-8 Disk Set For the Student, Traveler, Businessman

Coombe Valley Software

18 Nelson Close Teignmouth Devon TQ14 9NH 0626 779695

European Languages: £29.95 Oriental Languages: £34.95

Please specify language when ordering, Free brochure available (send SASE). Send £1 (rebated on regular purchase) for Demo Disk (specify language). Audio Gallery is copyright © 1993 by FairBrothers, Inc., 5054 S. 22nd Street, Arlington, Virginia 22206, USA. Tel: (703) 820-1954; Fax: (703)-820-4779. Distributed in Australia by Mallee Software, David G. Campbell, Underbool South Road, Underbool, Victoria 3509, Australia, Tel: (050) 946-358.

AMIGA VIDEO

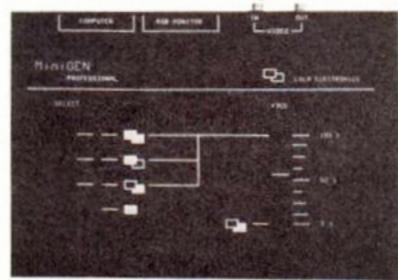


MINIGEN PROFESSIONAL GENLOCK



combined GENLOCK, PAL ENCODER and SYNCHRONIZED OVERLAY KEYER CONTROLS IN ONE UNIT

MiniPRO L1000 only £149.95



CAMCORDER USER

GOLD

AWARD

Features:

- Crossfade slider RGB through port BNC Connectors
- Cable connection to Amiga allows professional video desk layout
- Push button mode switching allows live programming changes

Also available:

CDTV GENLOCK - plug in card

miniGEN genlock - the original and now even better value

£79.00 £49.95

L520 TV ADAPTER - modulator for A500 etc

(includes Amiga/ TV Leads)

£29.95

Accessories - L520 extension lead plus plus other video lead kits available

For information on all the above please write or phone

LOLA ELECTRONICS LTD.

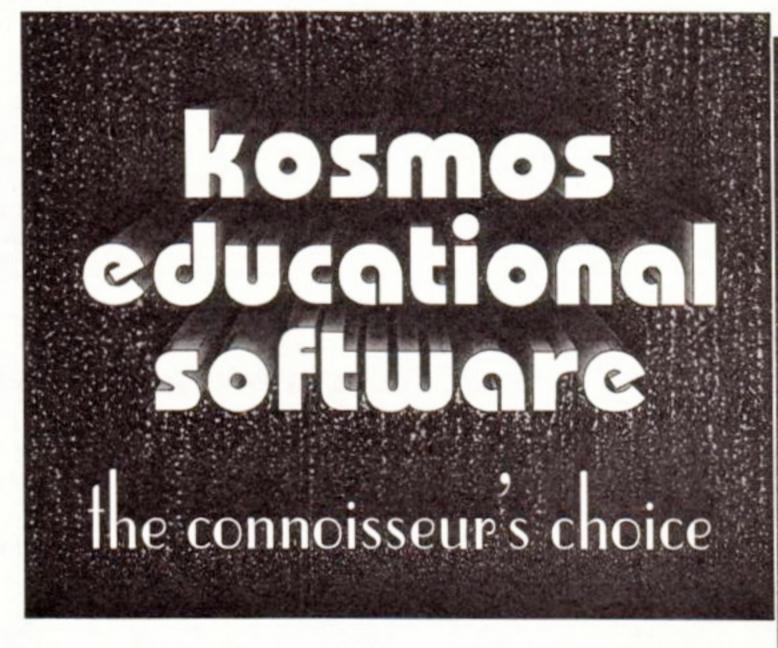
5 0858 880182

FREE POST MARKET HARBOROUGH LEICESTERSHIRE LE16 7BR

All prices include VAT & P.P.



12 month guarantee, 14 day full refund. Designed and manufactured in the U.K.



Our extensive range of educational subjects now include:

0	MATHS	0	GEOGRAPHY	0	SPORT	0
0	FRENCH	0	HISTORY	0	FIRST AID	0
0	GERMAN	0	ENGLISH WORDS	0	GENERAL KNOWLEDGE	0
0	SPANISH	0	SPELLING	0	ENGLAND	0
0	ITALIAN	0	ARITHMETIC	0	SCOTLAND	0
0	SCIENCE	0	FOOTBALL	0	NATURAL HISTORY	0

Write or phone for our FREE 16-page colour catalogue of Educational & Leisure Software (State computer type) to:

Kosmos Software Ltd, FREEPOST (no stamp needed) DUNSTABLE, Beds. LUS 6BR Telephone 0525 873942 or 875406







GHECKOUT NCOMMAND PRO

Features

Provides every type of gadget you could ever need.

Documentation

A professionally-produced manual,

which gives full details of every procedure.

Ease of Use

Fairly straightforward to use, once you have studied the example programs.

Performance

NCommand programs can be a bit sluggish when interpreted, but run perfectly once compiled.

Value for Money



Good value, especially considering the amount of effort that has obviously gone into making it.

Overall rating

A brave attempt to try and standardise the notoriously inconsistent user interfaces used in AMOS applications.

MOS is not simply a games programming language. There are actually a lot of

programmers out there who use our favourite BASIC-variant to write serious applications and utilities.

Unfortunately, AMOS doesn't yet run under the Amiga's standard GUI (graphical user interface), Intuition, so AMOS applications haven't had a consistent user interface. Authors have been forced to write their own interface routines from scratch. AMOS does provide a few basic commands for creating pull-down menus, text windows and slider bars, but they're pretty low-level, and it still takes quite a lot of effort to design your own user interface using them.

NCommand provides a set of about 50 procedures that enable you to produce AMOS user interfaces that emulate the look and feel of Workbench 3, no matter what version

0000000 SHOPPING LIST

AMOS NCommand Pro v3.0 ... £15 From: Oasis Software, 392 Birch Road, Wardle, Rochdale, Lancs OL12 9LX ☎ 0706 376572 (after 6pm)

NCommand

of the operating system you actually have. It includes some quite powerful routines for opening screens, drawing boxes, inputting text, and for producing all those other nice "Basrelief"-look gadgets that we're used to. There's even a fully-functional file requester that's better in some respects than AMOS's built-in one, and a text displayer.

The package includes versions compatible with both original AMOS and AMOS Professional, and comes complete with a small selection of well-written demonstration programs. These include an address label printer, a disk label printer, and even a screen designer that can produce the source code to the interfaces you design. However, the fundamental problem with NCommand is that although it superficially makes your

programs look as if they're running under Workbench, in fact they are not. Because AMOS always runs on its own hardware-level screen, NCommand programs don't allow proper multitasking

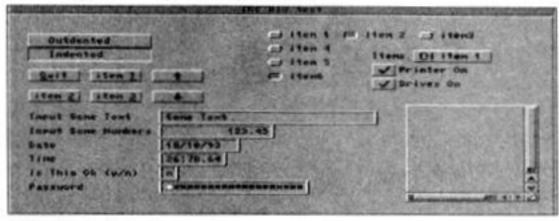
(except by using the <Amiga>-A key combination to toggle between AMOS and Workbench), or use of the clipboard or any other advantages of a real Intuition interface.

It's worth noting that a very similar extension, called simply Amos Interface, was given away on the cover disk of our sister magazine, Amiga Format, a few months ago.

To be fair, we can't really expect the author to completely re-write Intuition from scratch in AMOS. NCommand is an elegant, well written and completely usable GUI in its own right, but it's no replacement for a real Intuition-based interface.

The only question that remains to be asked is - what the hell does that "N" stand for?

Simon Green



This test interface shows most of the different gadgets that are available in NCommand. Sexy, aren't they?



igaMem is a virtual memory tool for the Amiga. It enables you to allocate large

chunks of your hard disk as "RAM" and fool the system into thinking that it is real memory. This enables you to perform memory-hungry operations such as rendering large objects, DTP, and so forth without having to buy vast quantities of RAM. The catch is, it requires an MMU (memory management unit) to work. This means you'll need a 68020, 030 or 040 based Amiga to use this product, and you must have a working MMU also. The 68EC030

CHECKOUT GIGAMEM V3.0

Documentation

Ease of Use

Clear and easy to follow.

Use the standard Commodore Installer to set it up and then it's plain sailing.

Value for Money

Cheaper than extra RAM if you have the hard disk space.

Overall rating

Highly recommended, if you have the hard disk space and the MMU required to make it useful.

in the A4000/030, for example, is unsuitable. (Note too that previous versions of GigaMem won't work with 68040 chips, but v3 does.)

GigaMem is surprisingly easy to install and get set up. I tested it on an A4000 fitted with a third-party 68030 board containing an MMU. The standard Commodore Hard Disk Installer tool is used, so it was a quick breeze through that to get it all going. One re-boot later, and I was up and running.

You can operate GigaMem in two ways. You can either allocate a whole hard disk partition to be used directly by the program as memory, or it can use a swap file instead. A swap file is a large file created by GigaMem that sits anywhere on your hard disk and contains the virtual memory. Swap files are far more risky, because if something goes wrong the whole partition could fail. Also, there are several restrictions on using applications that utilise GigaMem on the same partition as the swap file. I set it up initially with

000000000 SHOPPING LIST

GigaMem v3.0£69.95 Distributed in the UK by: Gasteiner Technologies, Unit 2, Millmead Business Centre, Millmead Road, Tottenham Hale, London N17 9QU.

☎ 081 365 1151.









a 5Mb swap file to see if it really worked as well as rumoured. GigaMemPrefs enables you to

specify how your virtual memory is to be configured and which applications will be able to use it. It comes with a whole list of applications which are known to work with the package. It is possible to add others to this list also, but some may not work, or only function in a limited manner. I tried it out with ADPro, Imagine and CygnusEd Professional - and it really did make those vast rendering jobs feasible on an A4000 with only 4Mb of real memory.

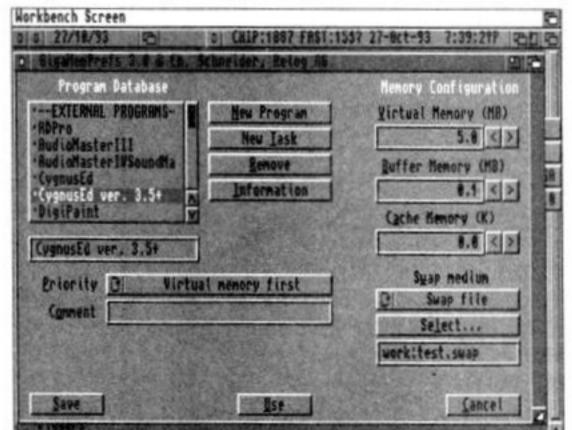
The catch, of course, with virtual memory is that it is on disk, and hard

disks are considerably slower than real memory, so any jobs which make use of virtual memory will take longer than normal. Rendering jobs, for example, can take weekends to complete rather than an evening. However, if you already have a large hard disk, and you can't afford to buy large quantities of RAM that you're only going to use on

those special occasions, then GigaMem is the tool for you. It's the sort of thing that's so handy, it should really be built into the operating system.

I had very few problems with GigaMem, mostly to do with some of the debugging tools that I run. It refused to operate with the latest version of the debugging tool Enforcer that I have, even though the manual said it would be fine, and caused some network problems. Other than that, it worked faultlessly; the manual and supplied software are well put together and very easy to understand.

Toby Simpson



GigaMem enables you not only to set up virtual memory but also specify what programs can use it.

Get it all together

he UK distributors of
Macro68 make the bold
claim that this is the best
Amiga assembler you will
ever use. I use HiSoft's DevPac 3 on
a daily basis to program computer
games, as part of my job as Lead
Programmer at Millennium
Interactive Ltd. I was therefore
interested in this claim, to say the
least. Anything that could improve
my productivity would be worth its

D. Macroba Critical Cast (1994) and Aurona (1994) The Brown day of the cast (1994) The Proper of the cast (1994) The Proper of the cast (1994) The Cast (1994) and (1994) and (1994) The Cast (1994) and (1994) and (1994) The Cast (1994) and (1994) and (1994) and (1994) The Cast (1994) and (1994) and (1994) and (1994) The Cast (1994) and (1994) and (1994) and (1994) and (1994) The Cast (1994) and (1994) and (1994) and (1994) and (1994) The Cast (1994) and (19

Macro68's almost obscenely configurable control program. Shame about the near-unreadable fonts.

Toby Simpson tests Macro 68K's impressive claims about being the world's greatest assembler.

weight in gold.

Installation, thankfully, is done using Commodore's Installer program, and it is extremely friendly and easy to use – and takes just a few minutes. Although it is possible to run this program on a floppy-based system, I doubt that it would be

practical for serious development.

Time to get started. I began with a real-life scenario and simply ran the assembler itself to see what happens. A file requester popped up, but unfortunately this failed to format itself to my screen fonts and looked less than neat. It would have been nice if the program had called the asl

requester for users of Workbench
2.04 and above. In at the deep end, I
took the Amiga CD32 version of
Diggers and attempted to assemble
it – 33,000 lines for the main
module. Unfortunately, I was unable
to get it to assemble with Macro68.
It found all sorts of strange errors,

and with a program that size I didn't have time to convert the source to a format that *Macro68* understood.

Time to look at the assembler in detail. Macro68 is a command line based assembler, and not a fully integrated package. Its direct competition in this country is HiSoft's DevPac 3, which comes with a full screen editor and

debugger. Macro68 does not come with a debugger – you have to buy one separately. Macro68 takes a great deal of setting up in order to get right. Its options are complex, and the option setter screen, designed to make this job a little more friendly, doesn't help by using



An assembly in progress, showing the sort of info that Macro68 gives, and its speed: 136,000 lines a minute.

An invaluable resource?

esource is a disassembler, which means that it takes machine code instructions and converts them back into assembly language, making the program easier to understand and therefore debug. It can't create C or any high-level language from machine code, but if you have a fair

Picture 1: the results of a conventional disassembler. Fancy trying to make sense of this lot then?

understanding of assembly language, a disassembler can go a long way to help you figure out how something works (or why it doesn't).

There are lots of disassemblers on the market, and quite a lot of very good public domain ones. Where Resource is unique is the degree of disassembling that it can actually do. Most disassemblers simply convert machine code to assembly language, end of story. Some, particularly those that come with debuggers (such as HiSoft's excellent MonAm, shipped with the DevPac 3 assembler) will also label things if special debug

information is appended to the end of the machine code program. Resource, however, with a little patience and a little deduction, can enable you to take a machine code program and disassemble it so far that not only can you alter and reassemble the results, but you can come very very close indeed to the

original assembly language program.

Getting started is easy.

Commodore's Standard Installer program is included, so if you have a hard disk, getting set up is a doddle. The documentation is excellent, with a good "Getting Started" section

which takes you through an example disassembly, and you soon see just how flexible *Resource* actually is.

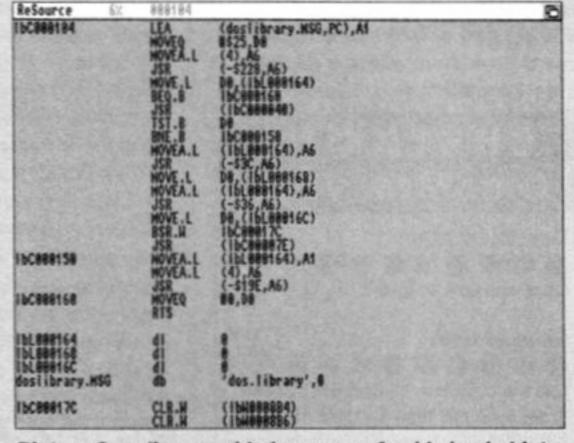
Where it differs from conventional disassemblers is that you can gradually build up a more and more readable disassembly. Exactly how does it achieve this? Well, a raw disassembly of a program without

debugging information is simply a collection of numbers and values, as in Picture 1 at left. These numbers are pretty difficult to follow, even for experienced programmers, particularly if there is more than a screenful of it. Having to decode and understand a decent size program - say about 2 to 3K

- would be a total Resource and Resource Resource performs its magic by enabling you to replace occurrences of numbers with meaningful names, and gradually work your way back until you have a reasonably accurate representation of the original assembly language. The

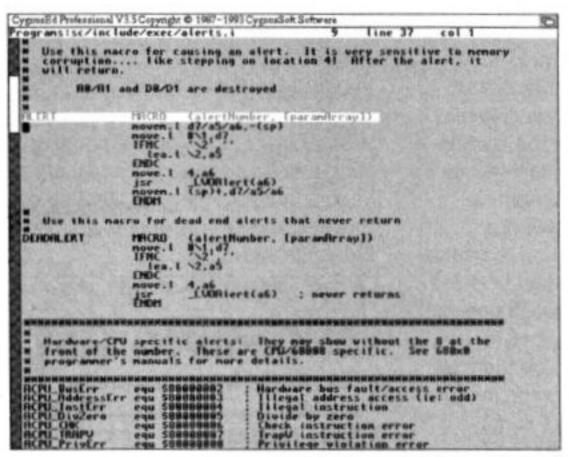
result is accurate enough to be reassembled afterwards, which is quite an impressive achievement.

To use Resource you just load in your file and select "Disassemble" from the menu, instructing Resource to scan the entire file and make its best guess as to what is data and what is code. It is impressively accurate, and the results give you your first clues to work from in order to further disassemble the file. See Picture 2 to see the results of this.



Picture 2: a disassembled program, freshly loaded into Resource and before we start work on it.

For example: Resource identified a reference to dos.library at the start of the program. A quick look at the following few instructions revealed that the dos.library was about to be opened, and the result stored in label reference "lbL000164". Our first step



Macro68 certainly isn't as easy to use as DevPac, or as forgiving: it found errors in perfectly runnable code.

a font so small that you need a magnifying glass to read it.

Macro68 is a full macro assembler, capable of assembling code from the 68000 to the 68030. and also the codes for the 68851 MMU and 68881/882 FPUs. It also assembles Copper instructions, has a wide and complete range of assembler directives, and is capable of putting information about errors in real time to a message port which can be read using ARexx. The manual is a bit flakey on this - it skips over it saying that it is "beyond the scope of the manual to provide detailed instructions for its use", and instead points you to the examples. For a beginner, this would be nigh-on impossible to grasp. Examples are provided for the CygnusEd text editor [reviewed on page 36 of this very issue, coincidentally] and allow the assembler to jump to the lines that contain faults as they happen.

to assemble the new syntax of 68000 assembly language, as defined by Motorola. Its customisability is amazing. If you spend enough time on it, you can virtually construct your own assembler in the way you want it to look. You can even define the final output strings that appear when assembly is complete. I'm not too sure how useful this would be in real terms, but it's there.

The manual is a bit hard to follow. There's no index, and finding a particular point can be very hard indeed. This is what made it hardest to convert assembly language that

Unlike DevPac 3. Macro68 is able

worked fine on DevPac 3 across to this assembler. A blessing is that the documentation is supplied also on disk, in a sort of Hypertext format. The Hypertext driver does not like it if you don't use Topaz 8 point as your main font, but nevertheless it's a valuable addition to the package.

THE BOTTOM LINE

If you're a beginner, check out HiSoft's DevPac 3. It is a fully integrated package, complete with an advanced editor, a powerful debugger and disassembler, and it's a whole bundle easier to use. The manual for it is very well laid out with a comprehensive index and table of contents. After spending a couple of weeks playing with Macro68, I can honestly say that I would not leave DevPac for it. HiSoft is much more friendly and easy to use, and a lot less complex to set up. I also enjoy the editor, and the debugger, and the ease of looking anything up in the manual. In addition to this lot. DevPac is cheaper.

If you're a professional who needs the configurability and access to the Motorola new syntax, then maybe Macro68 could be the assembler for you. But if you do buy it, be warned: you'll need to buy a separate debugger and editor if you

don't already have them. And again, if you're a beginner you will have a really hard time with this. (AS)



CHECKOUT Macro 68

Features

A flexible and very powerful assembler.

Documentation

The lack of an index makes it hard to find your way around, and some topics are not covered at all adequately.

Ease of Use

Very complex and unforgiving, and daunting for the beginner.

Overall rating

A powerful advanced 68000 assembler with a great deal of configurability.

was to tell Resource that in future any references to Ibl000164 should be called "_DosBase". Things are looking better already. You can now see which of the calls to the operating system use dos.library. Time to make those OS calls a little friendlier. I knew that the first one was a call to OpenLibrary, and Resource spotted this. I saw two calls to dos.library functions - they were easy to identify. I moved to the line in question, told Resource to look up

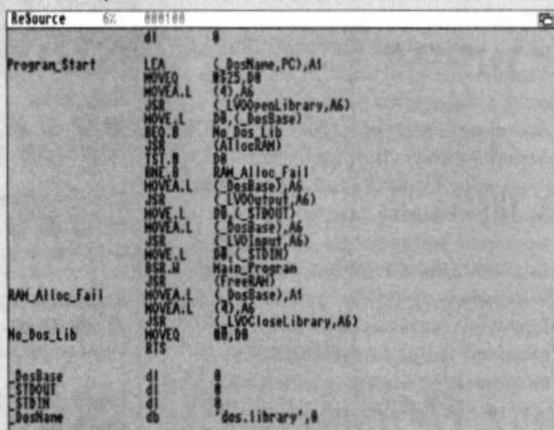
the function name. and bingo - a call to dos.library Output, and dos.library Input. My conclusion from this is that the program was fetching the default input and output channels, STDIN and STDOUT. So I was then able to correctly name those two labels too. By then following each of the subroutine calls to its destination and

finding its use by getting back all the names to calls of OS routines (and things were easier now because of references to STDIN, STDOUT and

_DosBase), I was quickly able to identify what each of the routines did and name them. In a matter of ten

minutes from start to finish I was able to make sense of several K of program. Picture 3 shows what I was able to do.

I started with quite a complex program, which I had no remaining documentation for, and I knew that it did not have debug information. I did this on purpose, because I knew that with a conventional disassembler I would be unable to understand what was going on, probably even after a weekend's work. Resource tackled it



Picture 3: the same program, about 15 minutes later. This is starting to make a lot more sense as code.

effortlessly, and I hardly had to touch some of its more advanced features.

Resource comes with a good few useful utilities, and a configuration program which enables you to change pretty much everything. I was a little alarmed though that the Configuration program gave an Enforcer hit: an illegal byte write to location FFFFFFF. No commercial program should have Enforcer hits in it.

One thing to watch for: Resource can be more than a little greedy with memory, though this is to be expected, given what it can do. A 10K object file that you are going to run through Resource will take up about 100K. The documentation suggests that you will need at least ten times as much memory as the size of the program in order to work on it. For example, if you have a 20K file, by the time you have finished creating labels and working on it you are likely to have used about 200K of memory.

THE BOTTOM LINE?

Quibbles. I had to think long and hard about this one. The Puzzle Factory have really come up with a powerful tool here. And anyone who is thinking of buying a disassembler really should look no further. The only thing is that for most people, something this extensive might not really be necessary - it is an extremely specialised product. It's certainly not a debugger, by any stretch of the imagination; it is simply an exceptionally advanced disassembler. If you already own a reasonably good one, say MonAm 3, which comes with HiSoft's DevPac, then to be perfectly honest it's unlikely that you would get your money's worth out of Resource.

And of course Resource is not a miracle worker. If you don't know what you're doing, you are unlikely to get much joy out of it. If you have the patience, though, you can achieve astonishing results. AS

00000000 SHOPPING LIST

Resource£130

By: The Puzzle Factory. Distributed in the UK by Helios Software, Notts. **☎** 0623 554828

CHECKOUT RESOURCE

Features

Brilliantly flexible and powerful.

Documentation

Excellent, with a very helpful "Getting Started" section.

Ease of Use

If you know what you're doing, Resource makes the job pretty effortless for you.

Overall rating

The best disassembler I have ever seen, but definitely a highly specialised product - make sure you really need it before purchase.

The ACC Hardware Programming Manual

his is a four-disk guide to programming the Amiga using the hardware directly, using 68000 assembly language. It comes complete with a linker and assembler (a particularly good PD assembler called A68K) - in fact, all you need to get started learning assembly language on the Amiga.

There's plenty of documentation and installation is easy, though there is no hard disk installation facility, so you'd have to do that yourself. The tutorial is divided into modules, each containing text explaining what's going on, some examples and various exercises to try.

The first part introduces the

basics, how to use the supplied startup code, and then the Amiga hardware in general, discussing Interrupts, DMA and the hardware registers themselves. You then go on to learn about programming the Copper co-processor, dealing with the mouse and keyboard, and information on interrupts and audio. I had difficulty getting a lot of the examples to work on an A4000/030, with some of them crashing the computer, and in one unfortunate case forcing a re-validation of one of my drives. Further investigation into the examples revealed some rather unfortunate programming techniques. which were causing some problems.

Disk 2 is dedicated to display,

bitplanes and screen organisation. Again, I had serious difficulty getting the examples to work, mostly because of the interrupt allocation technique used (take without asking). There are certainly some excellent general techniques explained though, for special effects such as flipping and melting the screen. Dual playfields are

also explained, but HAM, Interlacing and Extra Halfbright are not.

Disk 3 deals with sprites, the blitter, showing text on the screen, and scroll texts. The sprites section covers some very clever techniques joining sprites, 16-colour sprites, collision detection, and using a whole load of them to show starfields and other neat things. Most of these examples ran okay, although none of the scroll text demos worked for me. I had corrupted graphics on them all (most appeared to be screen modulo related). The AGA chipset is not detailed, which makes this guide effectively outdated, nor are some more advanced display techniques which is a good thing: with some ECS screen registers, it's now possible to actually damage your monitor by setting up impossible displays.

The guide is certainly clearly written and well organised. As for the content... well, if you're serious about learning to program the Amiga, this really isn't the way to do it. Many of the programming techniques are very risky, and a considerable proportion of them are totally illegal. Accessing the hardware directly is widely used in writing games or demos, but, if you are going to do it, do it properly. Guidelines are in the Commodore Rom Kernel Guides. There are certain things you simply don't have to break the rules to do. such as working with Interrupts, memory access, and the blitter. You don't actually have to disable the operating system to prevent it taking precious processing time. However, if your heart is set on writing whizzy

demos (despite the saturated demo market), and you're not fussed if they only work on a handful of machines, then I guess this is a pretty easy-to-follow way of learning how. Just be warned: when you start serious programming, be ready to do several months of un-learning.

Toby Simpson 000000000

SHOPPING LIST

The ACC Hardware Programning Manual£15.60

From: Amiganuts, 1 Daffern Avenue, New Arley, Coventry CV7 8GR. **☎** 0676 41257.

CHECKOUT ACC HARDWARE PROGRAMMING MANUAL

Ease of Use

Well-written and easy to follow.

Legality

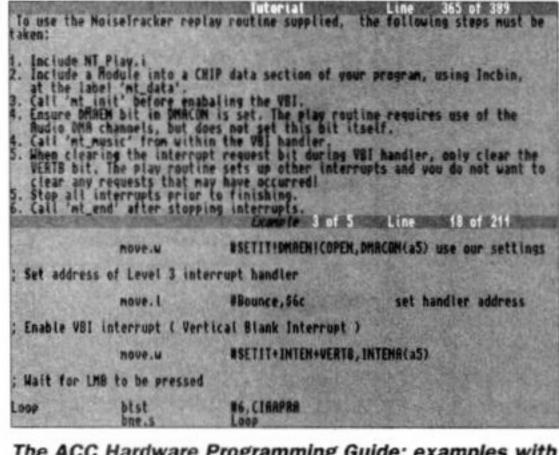
Accessing hardware has to be done properly, and this is not properly.

Value for Money

Not expensive, but not that valuable.

Overall rating

Even most demo-coders don't use most of these programming practices any longer, and many of the examples themselves don't work.



he CSA 12-Gauge is a

complete with a 50MHz 68030

chip, 50MHz 68882 floating point

unit, 4Mb of Fast RAM, and a SCSI

interface. Installation is easy: just

base of the A1200. To use the SCSI

insert it into the trap-door in the

blindingly-fast 68030-based

accelerator for the A1200.

The version reviewed came

The ACC Hardware Programming Guide: examples with easy-to-follow explanations. Shame they're a bit iffy ...

CSA 12-Gauge

option, you have to do some fiddling to get the connector installed, but you don't have to open the case and invalidate your warranty.

The MMU (Memory Management Unit) enables you to run such tools as GigaMem virtual memory (see the review on page 61) and lots of debugging tools for programming. The FPU chip makes rendering

applications, such as Imagine, whizz along almost as fast as an A4000/040.

The SCSI option enables you to plug in any SCSI device, including tape drives for back-ups, hard drives and CD-ROM units. Software is supplied for setting up and partitioning a hard disk, or if you have Commodore's HDToolBox you can use that instead. CSA also supply a

utility called DROM which maps your Kickstart ROM into the new Fast memory, using your MMU. This makes your machine even faster.

The board worked pretty much faultlessly. It did however adversely affect the boot-process of A1200s that already had a hard drive inside, preventing you from disabling caches and changing other A1200 bootscreen options. This could be something to do with the power load, and if you already have an internal hard drive you might be advised to try this first. Other than that, this board is excellent. It's quite expensive, but bearing in mind that it is well over twice as fast as an A4000/030, includes 4Mb of very very fast RAM

000000 SHOPPING LIST

CSA 12-Gauge accelerator for the A1200£799 Without 68882 floating point unit:

Distributed in the UK by: Omega Projects Ltd. **1** 0942 682203.

(expandable to 32Mb) and a SCSI interface too, it really is impressive. **Toby Simpson**

CHECKOUT CSA 12-GAUGE

Features

Full 030 chip, MMU, plus SCSI.

Documentation

Okay - even covers inserting SIMMs.

Supplied Software

Very comprehensive.

Ease of Installation

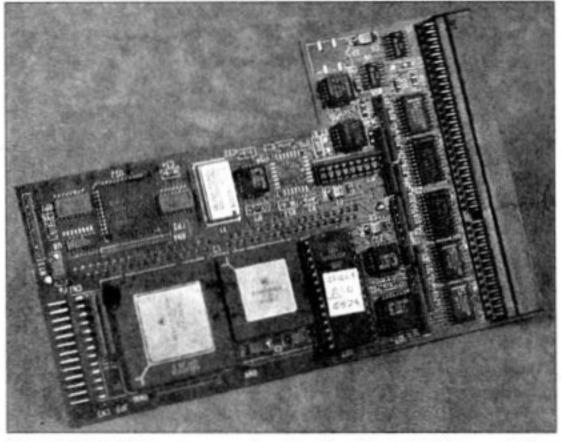
A doddle except for the SCSI option.

Value for Money

No doubting its speed, but expensive.

Overall rating

An excellent upgrade for the power user requiring the performance and expandability offered by SCSI.



The CSA 12-Gauge accelerator for the A1200 - a full '030 chip, MMU, FPU, SCSI, and lots of other letters...

CITIZEN PRINTERS

FROM SILICA

- FREE DELIVERY Next Day - Anywhere in the UK mainland
- 2 YEAR WARRANTY FREE HELPLINE
- (including the dot matrix printer head)
- WINDOWS 3.1 Free Windows 3.1 driver with Starter Kit
- Technical support during office hours
- FREE STARTER KIT With Citizen dot matrix printers from Silica



FREE STARTER KIT INCLUDES:

- 31/4" Disk with Amiga Print Manager
- 3½" Disk with Windows 3.1 Driver
- 1.8 Metre Parallel Printer Cable 200 Sheets of Continuous Paper
- 100 Continuous Tractor Feed Address Labels
- 5 Continuous Envelopes on Tractor Feed

AMIGA PRINT MANAGER V2.01 For laster printing from your Amiga, with clearer images and more vibrant colours. Available free of charge as part of the Silica Printer Starter Kit.

 Improved Image Smoothing • Image Scaling
 Gamma/Colour Correction • Colour Separation · Reduces/Illiminates Banding

CITIZEN PRINTERS

YEAR

Citizen 120D+ - 9 pin - 80 column

Graphics Resolution: 240 x 216dpi

The Citizen 120D printer comes supplied with a

parallel interface as standard. If you require a serial interface instead, please state ref: PRI 2125 when

240 CPS

144cps Draft, 30cps NLQ

Parallel or Serial Interface

Epson and IBM Emulation

· Pull tractor & bottom feed

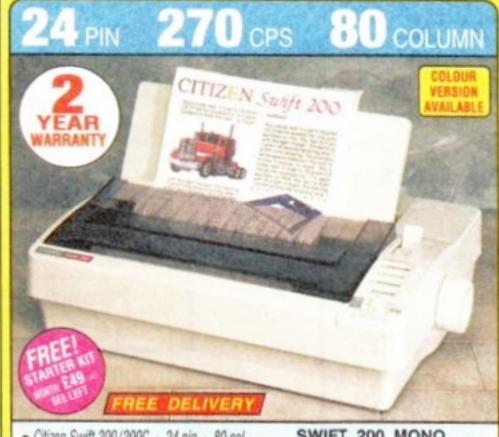
placing your order with Silica.

FREE Silica Printer Starter Kit

4K Printer Buffer + 2 Fonts

CHIZEN 120D+

CONTRACTOR OF THE PARTY.



- Citizen Swift 200/200C 24 pin 80 col
- 8K Printer Buffer (40K max) + 7 LQ Fonts Parallel Interface
- Graphics Resolution: 360 x 360 dpi Epson, IBM, & NEC P20 Emulations
- Quarter Printing and Auto Set Facility Ultra Quiet Mode - 43dB(A)
- Colour Printing Standard Swift 2000 Colour Printing Optional - Swift 200 · FREE Silica Printer Starter Kit

YEAR

SWIFT 200 MONO

TOTAL VALUE: £308 SAVING: £139

SILICA PRICE: E100 +VAT=E198.58 - PRI 2490

SWIFT 200C COLOUR

.... £279 STARTER KIT _ £49 TOTAL VALUE: E328 SAVING: £139 SILICA PRICE: £189

4 PIN 300 CPS 80 COLUMN

CITIZEN

Swift 240

+VAT=£222.08 - PRI 2496

CITIZEN 120D+

80 COLUMN

SILICA STARTER KIT £49 TOTAL VALUE: £248 SAVING: £133 SILICA PRICE: £115

VAT=£135.13 - PRI 2120

80 COLUMN

PERIPHERALS & ACCESSORIES

EXCLUSIVE OFFER



SHEET FEEDER

Semi-Automatic Cut Sheet Feeder for smooth trouble free paper handling. Requires manual sheet injection using lever.

Citizen Projet II Inkjet - 80 col

180cps Draft (10cpi).

120cps NLQ (10cpi)

Whisper Quiet 46dB(A)

. 1 x IC Card Slot for RAM.

Emulation and Font Upgrades

· Optional HP Compatible Font

• 50 Nozzle Head -

• 50K Printer Buffer

· 3 Fonts Built-in

Parallel Interface

300 x 300dpl

HP Deskiet Plus

· Graphics Resolution:

(PCL3+) Emulation

Ink Cartridge Only

· 2 Year Warranty

Auto Sheet Feeder (70 Sheets)

Includes Windows 3.1 Driver

Cards

For Swift 9, 90, 24, 24e, 200, 240, 224





SHEET FEEDERS

PRA 1222 124D/224/Swift 80 Col Printers . £88.1 SERIAL INTERFACES PRA 1209 Swift 9/9x/124D/224 £32.25 PRA 1709 Swift 24/24x/24e/200/240.... £26.38

32K MEMORY EXPN PRA 1753 224/Swift 24/24x/24e £14.45

PRINTER STAND PRA 1242 Swift 9, 90, 24, 24e, 200, 240, 224 £22.33 PRA 1274 Swift 9X/24X/200/240

ORIGINAL RIBBONS RIB 3520 120D/Swift 9/90 Black . £2.91 RIB 3949 Swift 9x Black... RIB 3924 124D/Swift 24/200/240 Black.. £4.20 RIB 3936 224/Swift 9/90/24/200/240 Col. £15.63 RIB 3248 PN48 Single Strike ... £3.61

RIB 3348 PN48 Multi Strike £3.61 COLOUR KITS PRA 1236 224/Swift 9/90/24e/200/240 ... £35.25

PRA 1240 Swift 9x/24x... £45.25 PN48 ACCESSORIES

PRA 1148 PN48 Battery. £46.70 PRA 1155 PN48 Cable Extri \$29.37 PRA 1162 PN48 Car Adaptor. £18.74 COLUMN

- Citizen Swift 240/240C 24 pin 80 column
- 300cps SD (15cpi), 240 cps Draft, 80cps LO RRP. 8k Printer Buffer - 40K maximum
- 9 LO Fonts + 2 Scalable Fonts (8-40pts)
- Font Cartridge Slot for plug in 'style' fonts Parallel Interface
- · Graphics Resolution: 360 x 360dpl · Epson, IBM, NEC P20 & CEL Emulations
- Ouarter Printing Facility Auto Set Facility - Bi-directional UF. Auto Emulation Detection
- Ultra Quiet Mode 43dB(A) · Colour Printing Standard - Swift 240c. Colour Printing Optional - Swift 240

Citizen Swift 24x - 24 pin - 136 col

FREE Silica Printer Starter Kit

• 192cps Draft, 64cps NLQ

· Colour Option Available

Parallel Interface

SILICA STARTER KIT £49

TOTAL VALUE: £538

SAVING: £239

8K Printer Buffer + 4 Fonts

FREE Silica Printer Starter Kit

. \$489

SWIFT 240C COLOUR

£339

STARTER KIT . £40

TOTAL VALUE: E388

SAVING: £189

SWIFT 240 MONO

SILICA PRICE: £199 .VAT=£233.83 - PRI 2560

STARTER KIT. £49 TOTAL VALUE \$408 SAVING: £189 SILICA PRICE: E219

VAT=£257.33 - PRI 257

CITIZEN SWIFT 90 YEAR

- Citizen Swift 90 9 pin 80 column 240cps SD (10cpi) 192cps Draft. 48cps NLQ
- 8K Printer Buffer
- 6 Fonts Built-in
- Parallel Interface Graphics Resolution: 240 x 216dpi
- Epson and IBM Emulation
- Auto Set Facility
- Ultra Quiet Mode 45dB(A)
- · Advanced Paper Handling
- · Colour Printing Standard Swift 90c Colour Printing Optional - Swift 90 FREE Silica Printer Starter Kit

SILICA PRICE: £139 +VAT=£163.33 - PRI 2290

SWIFT 90 MONO

SWIFT 90C COLOUR £219

STARTER KIT. £49 TOTAL VALUE: 5268 SAVING: £119 SILICA PRICE: £149

STARTER KIT . £49

TOTAL VALUE: £248

SAVING: £109

+VAT=£175.08 - PRI 2297

· Low Running Costs - Replace RRP. £316

SAVING: £97

SILICA PRICE: £219

TOTAL VALUE: £316





- Citizen PN48 Notebook Printer · Non-impact Printing on Plain Paper • 53cps LQ - 4K Buffer + 2 Fonts
- · Rear and Bottom Paper Loading Parallel Interface
- Graphics Res: 360 x 360dpi Epson, IBM, NEC P6 & Citizen Emulation
- Power: Mains, Battery or Car Adaptor

TOTAL VALUE: £325 SAVING: E126 SILICA PRICE: £199





OFFER YOU

Before you decide when to buy your new printer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after you have

made your purchase, when you may require additional peripherals and accessories, or help and advice. And, will the company you buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. With our unrivalled experience and expertise, we can meet our customers' requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service"

- FREE OVERNIGHT DELIVERY:
- On all hardware orders shipped in the UK mainland. TECHNICAL SUPPORT HELPLINE: A team of technical experts will be at your service.
- PRICE MATCH:
- We match competitors on a "Same product Same price" basis. ESTABLISHED 15 YEARS:
- We have a proven track record in professional computer sales. PART OF A \$50M COMPANY (with over 200 staff); We are solid, reliable and profitable.
- BUSINESS + EDUCATION + GOVERNMENT: olume discounts are available. Tel: 081-308 0888.

- We have demonstration and training facilities at all our stores.
- THE FULL STOCK RANGE: All of your requirements are available from one supplier.
- FREE CATALOGUES: Will be mailed to you with special offers and full details of
- hardware, peripherals and software. We accept most major credit cards, cash, cheque or monthly

terms (APR 29.8% - written quotes on request).



MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening	Tel: 081-309 1111 Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Opening Hours: Mon-Sat 9:30am-6.00pm No Late Night Opening	Tel: 071-580 4000 Fax No: 071-323 4737
LONDON SHOP: Selfridges (Basement Arena), Oxford Street, London, W1A 1AB Opening Hours: Mon-Sat 9:30am-7.00pm Late Night: Thursday - 8pm	Tel: 071-629 1234 Extension: 3914
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday - 7pm	Tel: 081-302 8811 Fax No: 081-309 0017
ESSEX SHOP: Keddies (2nd Floor), High Street, Southend-on-Sea, Essex, SS1 1LA Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 7pm	Tel: 0702 468039 Fax No: 0702 468039
IPSWICH SHOP: Debenhams (2nd Floor), Waterloo House, Westgate St, Ipswich, IP1 3EH Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 9pm	Tel: 0473 221313 Fax No: 0473 287762

To: Silica Systems, AMSHP-0194-55 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND A BROCHURE	ON THE CITIZEN RANGE
Mr/Mrs/Miss/Ms: Initials:	Surname:
Company Name (if applicable):	
Address:	

	Postcode:
Tel (Home):	Tel (Work):
Which computer(s), if any, do you own?	55W

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

RACE RATER V2

THE BRAND NEW PROGRAM FOR HORSE RACING ENTHUSIASTS

LOOK AT THESE OUTSTANDING FEATURES

- **★ WORKS ON FLAT OR NATIONAL HUNT**RACING (NO FURTHER PURCHASE NEEDED)
- **★ EASILY MAINTAINED DATABASE** (EXTERNAL DRIVE REQUIRED)
- * PRODUCES FORM, SPEED AND UNIQUE COMBINATION RATINGS
- * RATE UP TO 40 HORSES 40 HORSES IN ANY RACE
- * RATE ANY RACE IN A MATTER OF MINUTES USING THE DATABASE
- ★ FULL PRINT OUT FACILITY
- **★ MENU DRIVEN WITH POINT & CLICK INTERFACE KEEPS**TYPING TO MINIMUM
- **★ COMPLETE WITH MANUAL & BOOKLET TO HELP MAKE**THE MOST OF YOUR BETTING
- **★ FULL USER SUPPORT FROM THE AUTHOR**

ALL THIS FOR £40

CHEQUES PAYABLE TO THE AUTHOR & SOLE DISTRIBUTOR:

M THOMPSON 41 NELSON ROAD HULL HU5 5HN

ALL ORDERS RECEIVED BEFORE 18/12/93 WILL BE DISPATCHED IN TIME FOR CHRISTMAS

NO MORE REGISTRATIONS FROM RACE RATER V1.6 WILL BE ACCEPTED. I WOULD LIKE TO THANK ALL SATISFIED USERS OF V1.6 AND HOPE YOU ENJOY THIS NEW IMPROVED VERSION.

MEMORY EXPANSION

1Mb x 1	- 80ns		DIP	6.03
256 x 4	- 80ns		DIP or ZIP	6.03
1Mb x 4 (44C1000)	- 80ns	A3000	ZIP	21.82
1Mb x 4 (44C1000)	- 80ns	Static Col	ZIP	21.82
1Mb x 8	- 80ns		SIMMs (GVP)	44.65
4Mb x 8	- 80ns		SIMMs (GVP)	135.13
4Mb (32)	- 70ns	4000/30	72 Pin	141.00

Please phone for the latest prices. VAT included. Delivery £5.88

VISA KINGSWAY UK LTD

Phone: 0923 836473 Fax 0923 836474

18 Foxfield Close, Northwood, Middlesex HA6 3NU



Tel: 0626 779695 Day or evening

BARCLAYCARD

and all Major Credit Cards accepted CHEQUES payable to SELECTAFONT

O702 202835

teachers.
Format Gold in Amiga Format Autumn 92.
Trade enquiries welcome

Do you want to see your children use the computer for something other than shoot-em-ups?

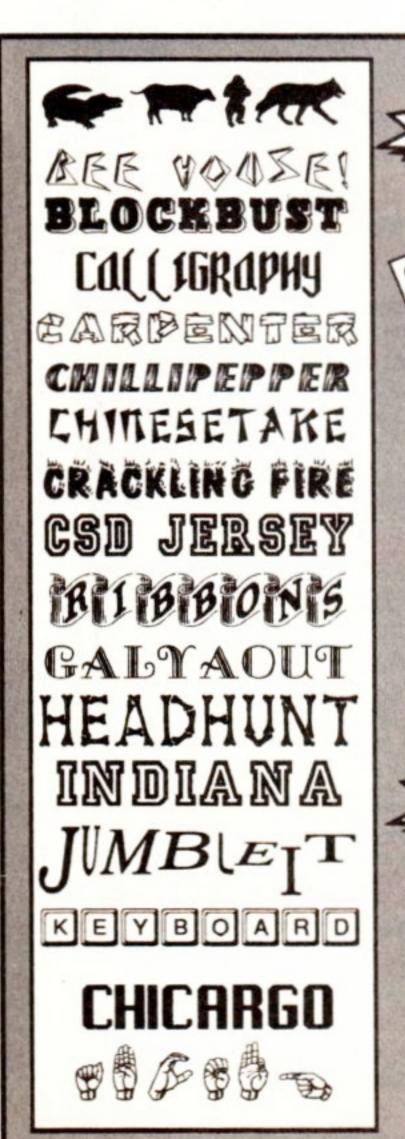
Would you like them to use more than four keys and a joystick?

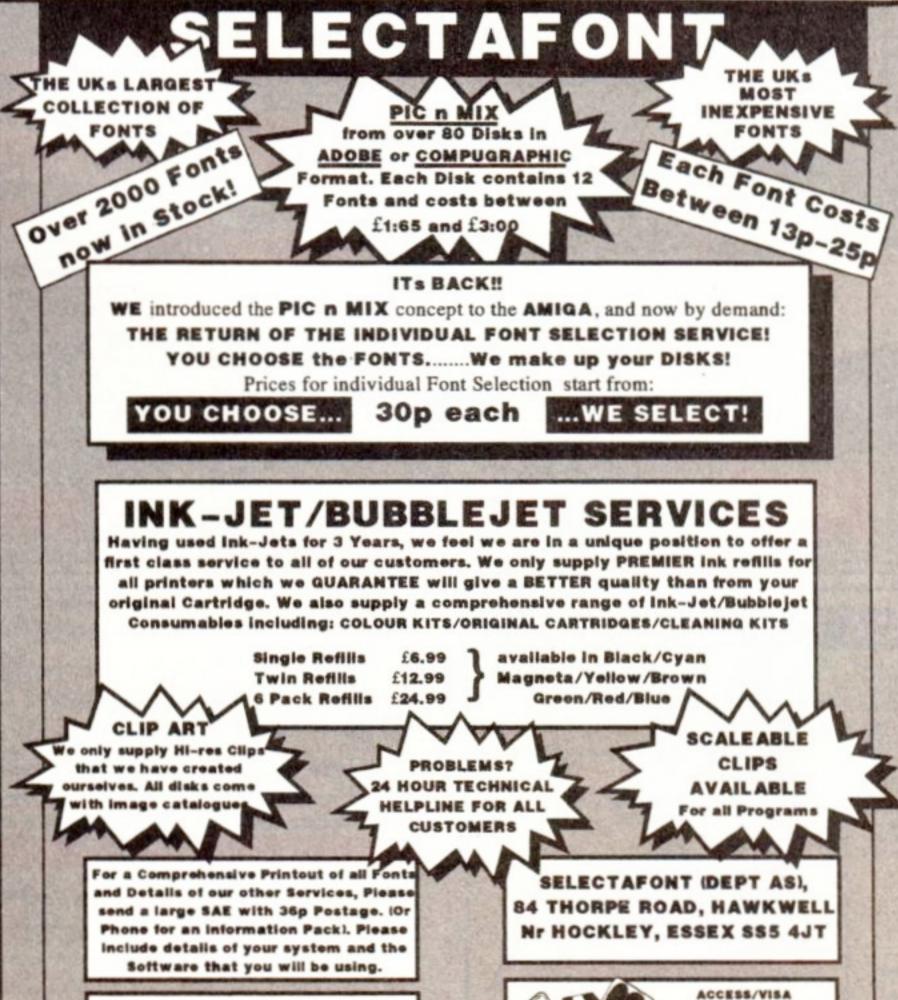
Do they get fed up with being killed off while trying to work out which button does what?

Coombe Valley Software may have what you are looking for

Send SAE for information or disk/50p for demos, state computer

To C.V.S. 18 Nelson Close, Teignmouth, Devon TQ14 9NH





PHONE AN INFO-PACK:

TEL 0702 202835

24 HOUR SERVICE



You bet it can:

Andy Nuttall tests the new AGA version of CanDo, the "authoring package" that makes it easy to create multimedia presentations.

ultimedia is the future - graphic images, animation, film, sound effects, music, all rolled into one. CanDo is here now, and it's an "authoring package" which enables you to create multimedia presentations on your A1200 or A4000.

CanDo presentations are called Decks, because they are made up from a number of Cards - single windows you can set up in different ways: you can use them to display information, either graphics or text; or you can include buttons which offer the user a number of choices. The contents page of a CanDo encyclopaedia would list the subjects and page numbers, with a separate button for each which the reader could press to access the page.

Other buttons could offer options to expand on specific parts of the subject.

You could also create an adventure game, where the player presses different buttons to move around the game or interact with characters. The CanDo Cards could be set up to display pictures of the game area, to run an animation, or to play

sound effects. If you have access to a video digitiser, you could even give people a guided tour of your house.

You even have the capability to create arcade-style games. A version of Tetris wouldn't be too difficult to knock up in a couple of days, while the odd puzzle game is supplied to give you an idea of what you can do.

CARD SHARP

A CanDo Card starts out as a background, and you can either design this yourself or use one of the many backgrounds supplied with the package. Images created by external packages can be imported into the backgrounds, so you can even use digitised pictures. The colours used throughout the design stage depend on the particular mode you're using -CanDo AGA makes use of all fullcolour AGA modes.

You can place on the background a number of Objects, which can

either be used to receive data or to display information - buttons and menus enable the end user to do something with your project, while a simple text box is a good way of telling the user what to do. The Card is simply a container for Objects you put in as many as you like.

Creating a button is easy. Simply open a background window, click on Button, move a set of crosshairs over the background and click your mouse where you want the button to go. Determine its size and colour, then check which type of border you require (sunken, raised, embossed you're given a number of choices). You can then test it out using the Browse option, and make sure it registers when you click on it with your mouse. Going back into edit mode, you can attach a label to it in

\$ma	_	Tue		Thu	Fri	Sut	Save Hovember 4, 1993 Priss
	1	2	3	9	5	6	13 ASSESSED TO SERVICE OF THE PARTY OF THE P
-	8	9	18	11	12	13	
4	15	16.	17	18	19	28	
1	22	23	24	25	26	27	
8	29	38					Market Strategies
				GoTo Non.	Find	Info	Notes
	Today	is He	venbe	r 4.	1993		
18/3	app	GII,	THE R	PER	Te di		的现在分词
Dro	MER			ADE	120	2.1	

CanDo comes with examples which we call functional, rather than graphical, such as this calendar.

any font, and tell CanDo which card to jump to, or which program to launch, when the button is pushed.

As well as buttons, CanDo enables you to create Workbench-like pull-down menus, along with smaller sub-menus if your application needs them. When you begin to create menus, things begin to look a little complicated - because you have a menu bar at the top of the screen which you've created, and one at the bottom of the screen which belongs to CanDo and is used as part of the editor. But CanDo is laid out very well, with a clear use of colour.

Other Objects can be set up to play sounds, display error messages, launch an ARexx script, run an animation – even to read the input of a joystick or mouse. You can create windows, fields, memos - even a timer to launch a script at a particular time of day.

Using the main editing screen in

this way is the most obvious, and certainly the easiest, method of creating presentations in CanDo. As in most

programming construction kits. creating projects using the graphical editor produces a separate script file, which CanDo then uses to run your project.

The script file is structured in a very similar way to a high-level programming language such as C. Pascal or ARexx. As you add in buttons, menus and other objects. CanDo modifies the script file accordingly. If you happen to be conversant with high-level languages, CanDo enables you to get in and write your own script files from scratch, bypassing the graphical editor altogether.

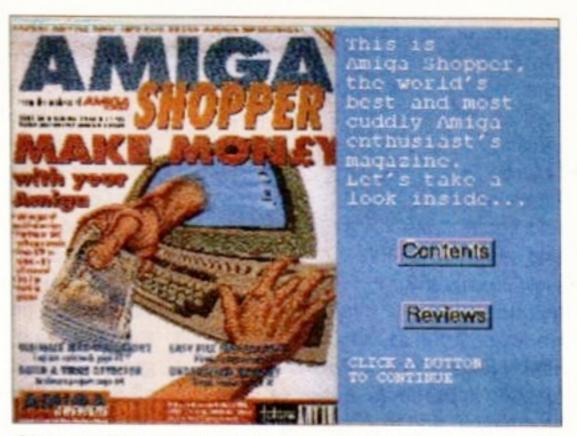
While hardened programmers will relish this prospect, it's a good idea for novices to stick to the main editor only - it's a damn sight easier, it's difficult to make mistakes, and debugging a CanDo script file is not easy. If you do want to get your fingers dirty, CanDo has the tools to help (see page 68 for details).

USEFUL UTILITIES

When you've created your project, you can run it directly from the CanDo editing screen. Clicking on the Browse button takes control from the editor and into your application to check that it's running correctly. This is necessary for debugging, because no matter how careful you've been, you'll always get at least one gremlin in your system. When you're satisfied it's bug-free, you can use one of the several utilities supplied to make your application stand-alone (that is,

to enable it to run without the main CanDo program).

TheBinder takes your project and integrates (binds) it with an executable file called DeckRunner. The result is a tool which, when executed, will locate all the graphics and sound files you included, and load them into memory. Another program



Okay, so it's a little on the nepotistic side; but you get a basic idea of what can be done with CanDo.

called MultiBinder integrates your project, DeckRunner and all the associated files into one tool - which saves the hassle of a large number of files in your final application. You can then put your project on a disk and distribute it to your friends!

Other useful utilities are: The Printer, which prints out the contents of a deck, along with information about objects and scripts; AnimManager, which runs via ARexx to control and play full-screen animations; and TheRelocator, which automatically changes scripts when you move associated graphics and sound files to a different path. This saves you having to go through scripts step-by-step changing path names whenever you move a file.

DOES IT DO?

Both the CanDo program and the manual are obviously geared towards the complete beginner. This is just as well, really, because the projects that most people will create with CanDo will be used by beginners.

It's a cliché, but CanDo will grow with you - it can be as complicated or as simple as you need it to be. If you want to create a simple noticeboard to display text, that's easy; if you want to add in graphics, sounds and so on, that's easy too. If you want to create a thousand-page encyclopedia, with colourful pictures and reams of informative text - well, it might not be easy to produce, but CanDo will help you all the way.

As you would expect, CanDo runs



CanDo applications are called Decks, which are made up of Cards. Our Shopper Guide has three Cards.

superbly on an A4000 - menus and functions are lightning quick. It also runs happily on an unexpanded A1200, although you do need a hard drive to run it. One bizarre point regards an apparent bug in the Amiga operating system. When you first install CanDo to your hard drive and launch it, an Out Of Memory error occurs. With 6Mb of RAM free, this not an easy one to explain! However, it can be corrected by simply loading up the ScreenMode function in the Prefs drawer of Workbench, and then clicking on Save. Strange, but this corrects the fault - and then you won't need to do it again unless you need to re-install the software.

It's worth noting that although CanDo v2.51 is AGA-orientated, it does work on Workbench 2 machines but without the benefits of AGA modes. It does not work with Workbench 1.3 or earlier.

CanDo really is incredibly simple to use. The example files and manual tutorials go through the Deck creation process step-by-step, covering all aspects of objects and cards, so you'll need to spend a good few hours following certain

portions of the manual before you start. Shock! Horror! Yes, you'll need to refer to the manual a lot while you're using CanDo, and it's a big tome, too. Trouble is, it's geared towards version 2 of CanDo, and because the layout and general look of v2.51 is markedly different from the earlier version there might be some

problems matching the manual to the screen.

Any other niggles? Only a couple. With CanDo 1.5 you could play sound samples, and sequence them together using a script file. This version of CanDo enables you to load and play MED tracker files, with which you can create four-channel music using samples and link them with your CanDo project. MED also enables you to link CanDo up to external MIDI instruments - but what about a link to MIDI sequences from, say, Bars and Pipes Professional?

> Given that CanDo is capable of producing some stunning graphical presentations, is this not a glaring omission?

Also, the package now supports Compugraphic and colour proportional fonts, but it doesn't support them in every function. For example, a Memo box will only accept



The main screen uses clear icons to create an intuitive interface that even an idiot could understand.

standard Amiga bitmap fonts, whereas a button will quite happily load in any type. This inconsistency is very irritating, and forces you on more than one occasion to display messages in the form of a button.

For the Amiga user wanting to create presentations, applications or educational tools, CanDo takes away all the programming headaches, leaving you to get your creative juices flowing and actually make something quickly and easily. CanDo AGA joins a long list of multimedia creation programs, including Hyperbook, Picture Book, and the previous CanDo incarnations. It offers A1200 and A4000 owners a creative tool which makes use of all the new AGA modes, all colours with all resolutions, adding up to a powerful piece of software. (AS)



CHECKOUT CANDO V2.51 AGA

Features

CanDo can do just about anything you

need for the perfect presentation in any AGA mode. The MED player addition is good, but it could do with a sequencer file player as well to enable you to make more complex presentations using MIDI instruments.

Documentation

0000000000

An excellent manual, well laid out, great as a teaching aid and as a complete reference guide. Problem is, it's geared towards an earlier version of CanDo. and things have changed - especially in the tutorials.

Ease of Use

This one's got "intuitive" written all over it. In large, friendly letters.

Performance

A little slow occasionally on an unexpanded A1200. Got an A4000? You'll be laughing.

Value for Money

150 quid's a lot of money, but compared to multimedia authoring packages on other machines CanDo's the equal of most, and better than

some.

Overall rating 0000000000

The best multimedia authoring package on the Amiga just got better. It needs a hard drive to run, but then if you're serious about your Amiga you'll need one sooner or later anyway. As the AGA machines grow in popularity, it's great to see packages like CanDo extended to encompass the new machines' features.



The Memo Editor is used to display text in any colour or form, but doesn't support proportional fonts. Why?

TOOLS

CanDo's script editor gives you the chance to get right into the code of multimedia authoring, bypassing the graphical front-end. If you want to get your hands dirty but you're not technically-minded, INOVAtronics have included a number of tools which take some of the slog out of that heavy programming...

- ARexx Enables CanDo to communicate with other ARexxcompatible programs via the Amiga's ARexx ports. This can be used to launch other programs from within CanDo, and transfer data between the two.
- BrushAnim Deluxe Paint III and IV BrushAnims can be played, moved and controlled from within CanDo. The animation is loaded into a

buffer, then the velocity, acceleration and position of the animation are entered - then just press the ShowBrushAnim tool.

- Bugbasher Click on this to perform a thorough syntax check of your CanDo script - it even checks for inappropriate keywords and missing quotes. There is also a simpler VerifyScript command which just checks for typing mistakes.
- DOS The DOS Editor tool enables you to run another program from within CanDo by providing you with a file requester. You then choose the program to be run, and the tool creates a DOS command which executes the file directly from the script.
- Field A field can be used to obtain information from the user of your finished project. With the Field Editor tool you can easily edit the position, size and look of the fields.
- Paint The Paint Editor tool acts like a basic paint program. Using the paint functions, you can draw in the selected window, and CanDo will create the appropriate script commands. Beware though - if you draw a complex picture, the script can become pretty large...
- · Picture If you need to locate and load an image file from a script, the Picture tool is the easy way to do it. CanDo's file requester opens to enable you to find a picture, and the tool does the rest.
- · Sound This is multimedia, after

all. Of course you can play sounds, which must be in the form of IFF samples - the 8VSX type which most Amiga samplers save out.

SoundSequence A

SoundSequence can be created in the form of a Document, a text file which contains a list of the sounds to be played in sequence. You can create more than one Document and launch them at different times during your presentation.

 Text When you have your CanDo window set up, the Text icon enables you to position text in it quickly and easily. Type the text into the Text Requester, then use the mouse to position it in your window. and - yes, you guessed it - CanDo creates the necessary script.

CHECKOUT THE MUSIC LIBRARIAN

Documentation

Truly dreadful manual, which takes a number of reads before you can get it straight in your head. Presenting information in alphabetical order is not a sure way to be understood.

9 8 9 9 0 0 0 0 0 0

Ease of Use

0000000 However, despite the manual's faults, it's not difficult to get up and running straight away.

Value for Money

00000 Not bad for the amount of flexibility this program offers.

Overall rating

A very useful program, although it must be said that it has somewhat limited appeal. You could feasibly turn it to other tasks, but there are better dedicated database programs if you want to create your own type of database. The integration of other types of file, and cross-referencing abilities, save it from being a rather limited and pointless release.

he Music Librarian is a database program specially for handling a large music collection. It offers a way of managing information on collections of music, be they CDs, LPs, tapes or video cassettes. Each file, known as a record, contains information about a particular musical medium, and gives you instant information on the recording artist, tracks on the album or CD, release date, catalogue number and

What makes it even more useful is the way you can link records of one type to another. Using External and Internal Pointers, records can be linked to other user databases within the program - so you might attach the record of a musical instrument to

other related information.

000000000

SHOPPING LIST

The Music Librarian£39.95 (plus £2.35 p & p if you order direct)

From: Applied Research Kernel, Corve Farmhouse, Corve Lane, Chale Green, Nr. Ventnor, Isle of Wight PO38 2LA **☎** 0983 551 496

The Music Librarian

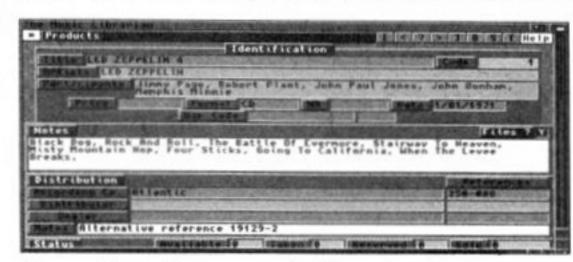
the record of a track it's used on, as well as a biography of the composer.

Even more powerful is the integration of other file types. For example, you can present IFF pictures, ASCII text files, and

even 8SVX samples from within the database. The possibilities here are very exciting - imagine being able to bring up a CD's file, see the album cover and hear the first few bars of music, all from the one program.

The program is not difficult to use, although if you have a floppybased system I'd seriously advise

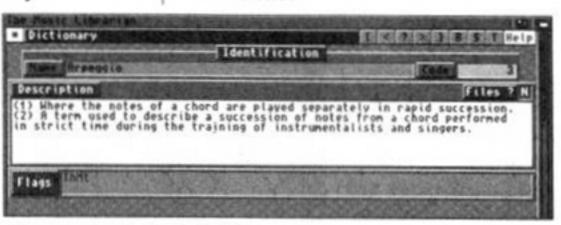
against it. I didn't once manage to get the program working properly running from floppy, and I tried on three different Amigas. On hard drive it's fine. My only reservations about the software is



Cross referencing your music library is a doddle with The Music Librarian.

its overall usefulness. How many people are going to want such specific facilities from a database? Still, there is a lot of flexibility built in to the program, and if you are looking for some way of cataloguing a vast collection, you need look no further than The Music Librarian.

Tim Tucker



You can include definitions or explanatory notes, perhaps to go with a feature on a favourite composer.

ooks and magazines can help when you're learning the ins and outs of computer-generated

music, especially since so many of the manuals are so badly written. However, given that the best way to

CHECKOUT THE MAGIC OF MUSIC AND MIDI VIDEO

Presentation

00000000 The diagrams are awful, and some important concepts are described but not actually shown. Even reading text out loud doesn't make it any clearer.

Information content

866660000 A lot of ground is covered, and a good deal of Amiga software demonstrated, but too often the explanations are unclear and confusing.

Value for Money

998000000 Really only watchable once, after which you'll be using it to tape East Enders.

Overall rating

999900000 The lack of depth, gaping omissions, and some vague explanations ensure that you won't find all the answers to your music-related questions here. In fact, it's more likely to throw up some new ones you hadn't even considered. Best thought of as a way of seeing what's possible, but you're unlikely to watch it more than once.

The Magic of Music and MIDI video

explain almost any subject is visually, video clearly holds the key. Razza's latest, The Magic of Music and MIDI, not only covers the hard facts about computers and music, it also does it entirely from the perspective of the Amiga.

The video covers all three areas in which your Amiga can be used to produce music - using the Amiga's own internal sound chip as a synthesizer, using the Amiga to digitally sample sounds, and using the Amiga at the heart of a MIDI sequencing system. During the onehour presentation a variety of the most popular music programs on the Amiga are used to give examples, including Dr T's Tiger Cub, Blue Ribbon Soundworks' Bars and Pipes Professional and SuperJam, the Audio Master IV sampling package, Deluxe Music Construction Set and Sonix. By seeing what each of these can do and how they do it, you can see what might suit your own needs.

An hour isn't long enough to go into much detail on all the subjects

000000000 SHOPPING LIST

The Magic of Music and MIDI Video£12.99

From: Burgess Video Group, Unit 6, The Industrial Estate, Brecon, Powys LD3 8LA. **☎** 0874 611633

covered, and all credit to Razza for giving a broad range of information. However, although those involved and interviewed clearly know their subjects, their explanations are very badly communicated. The subject of MIDI suffers the most, with particularly atrocious diagrams. Someone's got Deluxe Paint and thought it would be useful, but a mouse user's handwriting is not the easiest to read. The chance to use practical examples is criminally neglected in favour of shots of someone aimlessly pushing a mouse around a sequencer's main screen,

and the coverage of MIDI inputs and outputs is baffling. It's nice to see the famed American enthusiasm shining through, but the claim that MIDI offers "complete satisfaction instantaneously" is a little far fetched.

Too often the video lingers on the obvious, rather than explaining the intricacies. Three times we are treated to the secret of plugging a microphone into the socket marked

Microphone on a sampling cartridge. but never do we see where a MIDI interface plugs in to the back of an Amiga and how it should be attached to external equipment. In the section on the printing of musical scores, we see the incredible advancements of printer technology, but not what printed music actually looks like.

The best this video offers is an introduction and a guide to what's possible. But if you want useful, usable information you'll have to go back to old-fashioned books — and a subscription to Amiga Shopper.

Tim Tucker



The Magic of Music is a useful introduction, but rather than answering questions it might throw up new ones.

This stop for music

etting up a MIDI system
with your Amiga usually
requires some peripheral
equipment. An external
MIDI keyboard with built-in sounds

is the simplest set-up, and possibly a separate tone module for accessing more sounds. You'll also need a MIDI interface to attach to your computer so that all your bits of kit can communicate with each other, and a mixer to enable you to hear the separate sound sources playing together. Before long, your bedroom or work area starts to get a little cluttered. In recent times, the concept of desk top music has crept into the home computer music

versions of tone
modules are being
brought out all the
time, enabling
musicians – or just
people who wish to
integrate music into
a multi-media
environment on the
Amiga – to work
with equipment with

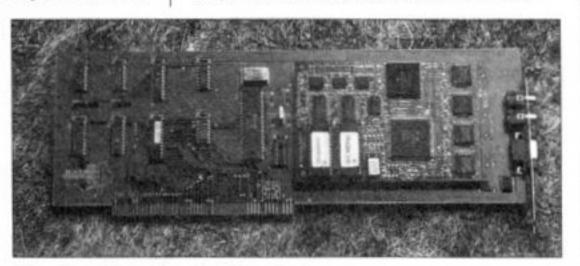
great flexibility but which doesn't take up too much work space.

The idea of having a totally integrated multi-media workstation is highly appealing, and nobody has done more to further the cause on the Amiga than Blue Ribbon Soundworks. Highly powerful music programs, such as *SuperJam* and *Bars and Pipes Professional*, have been carefully designed to enable the integration of almost any facet of the Amiga's many capabilities, including graphic art, animation, desktop video and of course sound

The One-Stop Music Shop offers quality synth sounds from within your Amiga. Tim Tucker checks it out.

effects and music. The same company has just gone one step further and introduced the ultimate in musical hardware integration – The One-Stop Music Shop.

The One-Stop Music Shop is a card containing the Proteus SoundEngine synthesizer module from E-mu Systems Inc, so in essence it contains many of the same sound capabilities as the family of synths based on the highly popular Proteus range, widely used in professional circles all round the



The One-Stop Music Shop is like having an entire synthesizer sitting inside your Amiga ready to play.

world. The card sits inside the Amiga 1500, 2000, 3000 and 4000, and thus enables you to have an entire synthesizer available to you without using up any valuable desk space.

Installing the card is not difficult, just requiring you to take off the outer casing and push the card into one of the available card slots. If you've never done this before, it's much easier than it sounds, and once it's done the card can be just treated as part of the Amiga. The only evidence of its existence are three new ports on the back of the

Amiga – two RCA jacks, exactly like the ones which already sit on the back panel of your Amiga and which take the audio out of the sound card; and a new MIDI port which directly accesses the *One-Stop Music Shop* synthesizer. The great thing about the extra MIDI port is that it enables the use of 32 channels of MIDI, if you're using the card in conjunction with *Bars and Pipes Professional*, because you can still attach a normal MIDI interface to the Amiga's serial port as well. More on this later.

SOFTWARE

Accompanying the hardware is a program disk containing The One-Stop Music Shop's software tools, essential for making the card accessible to the user. The simplest way to use the system is to load up the LoopBack program and connect a MIDI lead from the MIDI Out of a keyboard to the MIDI In of The One-Stop Music Shop. This effectively turns the Amiga into a synthesizer tone module, enabling you to play music on your keyboard and trigger the internal sounds on the card. The individual sounds are organised into two banks of pre-sets containing 192 sounds, which conform to the General MIDI specification (see box for information). All the sounds you need are available, from piano, strings, brass and guitar to drums and percussion.

Most of the sounds are handled very well by the card. There's a good variety of pianos, from the full-bodied concert model to the tinny honky tonk, as well as other excellent keyboard instruments, including a superb funky-sounding clavinet, rich and full-bodied organs (oooer), and a delightfully baroque harpsichord preset. The guitars are noteworthy for actually sounding reminiscent of the real thing, rare on synthesizers, and the strings are truly wonderful, highly usable washes of sound. The brass instruments are slightly weedy, but can be layered on top of each other in a sequencer to great effect, and there are some useful choir and pad sounds to add the required ambience to your music. Unfortunately, there are no built-in effects in the synth, which is a shame - it's something which every synth worth its salt features these days. The extra cost of including them may not have been justified, and there are a lot of very good value reverb units available these days, but it does rather defeat the object of an integrated system to have to resort to outboard effects.

Perhaps the weakest area of the sound card is the bass and drums side. There's nothing terrible here, but the punch and bottom end demanded by today's dance music is sadly missing from the pre-sets. Still, don't let that put you off – it's rare for a synth at this price to shine in this department, and it's certainly possible, with the wide range of sounds available on the card, to produce music in any style you want. The convenience of having the card sit comfortably in your Amiga must

GENERALMIDI

The One-Stop Music Shop's sounds are organised according to the General MIDI specification.

General MIDI is a relatively recent introduction to

the MIDI world. It solves the problem which many MIDI users were encountering, whereby the music created on one synthesizer is not necessarily compatible with the instrument layout on another. For example, one synth might have a piano sound assigned to a certain program change number (a MIDI command which instantly brings up a pre-set sound on your synth), whereas another may have a harmonica. The result was that whenever you tried to play a song

same channels as the other. Now any General MIDI compatible synth will allocate each instrument type to exactly the same program

Load a HIDI File:

Available Volumes.

TRUB:
ScreenGrabber:
One-Stop Husic Shop:

Parent
Adventure
Adventure
Carribean
Chill
File Americana
Type nid

Load

Cancel

Nov Playing:
Author:

The MIDI File player makes it easy to load up any General-MIDI-compatible files and hear them played immediately.

change numbers. For example, sending program change number 16 to a General MIDI synth will always bring up a Vibraphone sound. Obviously, the sounds aren't identical, because each synth has a

different sound-producing architecture, but you can be sure that the music will come out sounding as close as possible to the way you recorded it.

Another advantage of General MIDI compatibility is the possibility of playing General MIDI files. These are songs and musical pieces written specifically with General MIDI in mind, and they enable you to simply load them into your sequencer, or the stand-alone MIDI File player which comes as part of the *One-Stop Music Shop* package, and hear them play back. The MIDI file player is also ARexx compatible, so you can issue instructions for it to load and play

various pieces of music using ARexx scripts generated by other ARexx compatible programs. This is very useful if you want to use other people's music in your multi-media productions.

created on one synth through another, all the

would take a good deal of time trying to set the

instruments could come out tragically wrong, and it

new synth up to play the same instruments on the

CLOSE TO THE EDIT

You are not just limited to the pre-set sounds inside the One-Stop Music Shop. A software editor is provided which enables you to edit many aspects of the sounds to create your very own pre-sets. If you've never edited synth sounds before, have no fear - the process is made a lot simpler using the software editor. Instead of you having to wade through lots of incomprehensible numbers and data fields, the editor presents the information using sliders and graphical representations of

envelopes which you can manipulate with the mouse. Even if you don't know what you're doing, you can easily muck around with the on-screen controls and see what you come up with. It's an ideal way to learn the fundamentals of synthesizer sound design.

If you do extensively edit the sounds on the card, you may well find that it is no longer General MIDI compatible. For example, if you edit the piano sound to such a degree that it sounds more like a trumpet, then any General MIDI files which call up the piano won't

Name: Str Ensubl 2 Preset #: Ul LFO 1 TONIS DOD Key/Velocity Ctl Realtime Ctl Hispellaneous Low Note: G18 118 High Note: Envelope On Decay Time: 68
Attack Time: 28 Sustain Level: 85
Hold Time: 8 Release Time: 18 Coarse Tune: Fine Tune: Sound Start: Delay:

The editing software provided makes creating your own custom sounds a breeze - but they won't be played back the same way on another synth.

> sound correct. You can save edited sounds to disk, and load them whenever you need them, so you can always keep the General MIDI side of the synth on power-up.

On the other hand, you can save your edited banks as defaults, so that the card boots up exactly as you want it. This flexibility is a very powerful element of the One-Stop Music Shop and, especially with a hard drive, can make the accessing of edited sounds for different pieces of music an awful lot easier than with an external piece of MIDI equipment.

not be belittled, and it brings the ideal of a totally integrated multimedia environment closer to reality.

If you're looking for a new synth to add to your collection, this may not necessarily be the answer. There are hundreds of tone modules and rack-mountable synth expanders which can do the same task, and other synths may well offer more appropriate sounds for your kind of music. What this does offer is the

convenience of being able to access top-quality synth sounds from within your Amiga, making the concept of integrated desktop multi-media a real possibility. In conjunction with the Bars and Pipes Professional sequencer it becomes even more powerful, offering the only current Amiga system which enables you to access more than the standard 16 MIDI channels - a major step forward in making music on the Amiga.

000000000 SHOPPING LIST The One-Stop Music Shop £569.95 By: Blue Ribbon Soundworks Limited From: Meridian Software Distribution, East House,

East Road Industrial Estate,

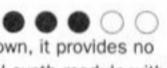
London SW19 1AH

☎ 081 543 3500

CHECKOUT THE ONE-STOP MUSIC SHOP

Features





Considered on its own, it provides no more than a normal synth module with the added convenience of sitting inside your Amiga. Integrated with Bars and Pipes Professional, it offers enormous potential.

Documentation



An informative and well-laid-out manual, though I question the validity of starting the manual with how to edit the synth.

Installation



An easy job to do, if you're not afraid to lift the cover off your Amiga, although there's no detailed walk-through in the manual.

Value for Money



It seems a lot to pay, and there are cheaper ways of making music with your Amiga, but many of its facilities simply can't be found elsewhere.

Overall rating

An excellent system, which can transform your Amiga into an incredibly powerful workstation. Not necessarily the best sounds available at this price,

but the convenience and flexibility of the system as a whole more than compensate for anything lacking in the sound department.

NTEGRATION

You can use the One-Stop Music Shop with any MIDI sequencer on your Amiga, although it does take a little fiddling about. You have to load the LoopBack program, provided with the card, before loading your sequencer. You also have to have a separate MIDI interface connected to the serial port of your Amiga, and then take the MIDI Out from your standard MIDI interface and connect it with a MIDI lead to the MIDI In of the One-Stop Music Shop interface. You can connect a keyboard to your Amiga in the usual way by plugging a MIDI lead from the MIDI Out of your keyboard to the MIDI In of your standard MIDI interface. In essence, you're treating the card as an external

synth module which just happens to be sitting in your Amiga.

By far the best way of integration, though, is to use the card in conjunction with the same company's Bars and Pipes Professional sequencer. The floppy disk supplied with the card provides One-Stop MIDI In and Out tools and Sound Engine In and Out



There's a built-in patch slider tool which makes it easy to change selected sounds when using the One-Stop Music Shop.

HED_Saves: Hoss_Zawa.song General HIDI ₩ = 1 2 3 4 5 6 7 8 Group 088 I> > 44 >> 0037 R BE 0 (4) 7 2 10 11 12 13 (1) (1) (1) (1) (1) (1) (1) (1) MINDER OF BUILDING

All thew tools you'll need to run The One-Stop Music Shop from within Bars and Pipes Professional are provided with the card.

plonked into a pipeline in any of Bars and Pipes' tracks to access the sound card, without any need for further connections - it's all done within the Amiga. It also frees up your normal MIDI interface. attached to the serial port, for sending out another 16 channels to any other external

tools. These can be just

synths, samplers and drum machines you may want to use. This effectively gives you 32 channels of MIDI - a first on the Amiga - and enables you to produce incredibly complex musical arrangements and orchestrations.

Integration with Bars and Pipes doesn't stop there, however. Software accessories are provided which enable you to bring up the sound card's software editor, change sounds on the card using an on-screen slider, and manipulate the arrangements of sounds in memory, all from within Bars and Pipes itself. This way you can simply control the sound card and sequencer all from one incredibly powerful integrated program. Superb.

Printing with a

Jeff Walker tests two programs designed to improve your Amiga printouts: TruePrint/24 and Studio.

he Amiga prints colours in 12 bits and shades of grey in 4 bits. That means it can print 4,096 colours and just 16 shades of grey, so you'll get your 256 colours out of DPaint okay (although they may not print exactly as they are on-screen) and your 16greyscale hand-scans will print

perfectly well. But without help the Amiga can't take full advantage of the latest mono and colour inkjets or 400/600 dpi laser printers. That's where TruePrint/24 and Studio Printer Software come in.

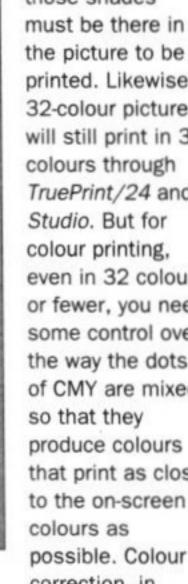
As the "24" after TruePrint will suggest, it can print pictures containing up to 24 bits of colour up to 16.8 million colours - instead of the standard Amiga 12 bits. The same is true of Studio. Both programs achieve this remarkable feat by relieving

the Amiga of the task and producing for themselves 256 shades of cyan, 256 shades of magenta and 256 shades of yellow; by mixing those shades together in patterns they can simulate printing up to 16.8 million colours (256 x 256 x 256).

Shades of grey contain equal levels of cyan, magenta and yellow (CMY), so this means, for standard Amiga printouts, that because there are only 16 possible equal combinations of CMY, you can print only 16 shades of grey. TruePrint/24 and Studio both increase this to a possible 256 shades of grey. Now of course this doesn't mean

that your 16-greyscale hand-scanned

pictures are going to print in 256 shades of grey those shades must be there in the picture to be printed. Likewise, 32-colour pictures will still print in 32 colours through TruePrint/24 and Studio. But for colour printing, even in 32 colours or fewer, you need some control over the way the dots of CMY are mixed, so that they produce colours that print as close to the on-screen colours as possible. Colour correction, in other words. The Workbench



Prefs/PrinterGfx program provides a very rudimentary colour correction facility that, thanks in part to having only 16 shades each of CMY to play with, does not work particularly well. TruePrint provides you with more power. As well as being able to adjust the brightness, contrast and gamma of printouts, you can adjust

the levels of red, green and blue. This is a bit of a strange system for a printing program because colours are not printed in red, green and blue, but experiment a little and you soon get the hang of it.

Studio provides even more control over colours, and it does it in CMYK (the K stands for black). In fact, Studio provides so much control that at first you can be

overwhelmed by the seemingly endless options. As far as computer software is concerned, complexity always seems to be the price you have to pay for power, and you don't always have the time to learn. But again, with a little experimentation you soon discover what does what.

The results of printing from Studio and TruePrint/24 are fairly similar. Both do an excellent job, but I would say that the Studio printouts have the edge once you've learned how to control the beast, which means reading and re-reading the manual, experimenting a lot, and making notes.

The big difference between TruePrint/24 and Studio is that TruePrint/24 can only print IFF pictures through the provided pictureprinting program - no good at all for use with a word processor or DTP program. No printer drivers are

00000000 SHOPPING LIST

TruePrint/24£69.99 By ASDG Inc, 925 Stewart Street, Madison, WI 53713, USA Distributed in the UK by:

Meridian Software Distribution Ltd, East House, East Road Ind Est, London SW19 1AR. **☎** 081 543 3500

CHECKOUT TRUEPRINT/24

Features

••0000 Limited dither patterns, only RGB correction facilities instead of CMYK, and no printer drivers supplied for the likes of the new and cheaper laser

Documentation

printers and colour printers.

66666 The manual will teach you a lot about printing and colours.

Ease of Use

Pretty much click-and-print.

Speed

Printout speeds are dictated mainly by the speed of your Amiga.

Value for Money

You might be better off buying ADPro, which comes with this program as a saver module.

Overall rating

Requires better drivers than come with the Amiga to get the best out of it.

provided with TruePrint/24, so it will only work with printers for which you already have a printer driver. Studio also contains a picture-printing program, which is very similar indeed to TruePrint/24. But the aces up Studio's sleeve are the Amiga printer drivers that come with it, providing support for all Hewlett-Packard DeskJets and LaserJets, and most Epson-compatible 24/48/64-pin/jet printers. The Studio preferences programs provide control over page sizes, typefaces, dither patterns, colour correction, and any program that prints in the normal Amiga way (which is 99.99% of all Amiga software) is able to take advantage of the enhanced features in the 100% Amiga compatible Studio printer drivers. Or to put it another way, as well as being able to print pretty pictures itself, Studio can also enhance the output from programs like ProPage, PageStream, PageSetter, Wordworth, Final Copy, DPaint, Brilliance, and many others. Both are good; this is great. (AS)

00000000 SHOPPING LIST

Studio Printer Software ..£49.95 By JAM, 75 Greatfields Drive,

Uxbridge UB8 3QN. **☎** 0895 274449

CHECKOUT STUDIO

Features

00000000 So many powerful features that it may frighten and confuse the beginner.

Documentation

Good technical manual, but too little help for the inexperienced.

Ease of Use

Simple when you know how, but it can take quite some time to learn what everything does.

Speed

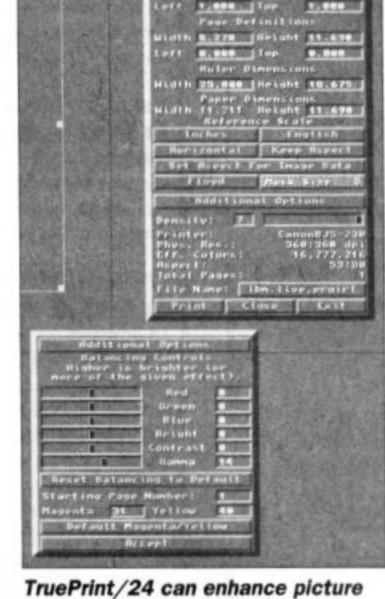
Very impressive. Can print megabytes of data in just a few minutes.

Value for Money 000000000

Really gets the best out of Hewlett-Packard and Epson-compatible printers in both mono and colour.

Overall rating

Gives the Amiga the printing power it deserves. I thought it was so good, I became the UK distributor for it.



Print Pinemiums

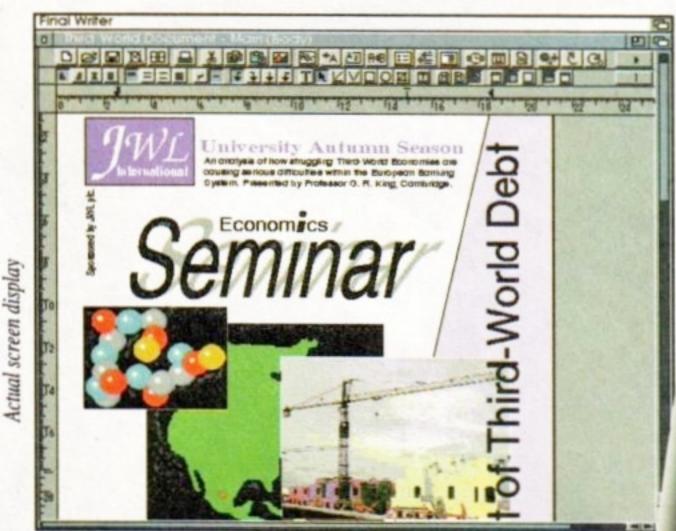
figth 6.000 [Height 9.070

printing only - it won't help you get better WP or DTP printouts.

Paper Disension Charges | [11. Elif | in [17. Elif | disent Foun Save Butting

This is just half of the Studio software - the other half enables you to enhance not only picture printouts but the printed output from almost all Amiga software.

You can't use Software this Powerful, and produce Documents this Good...

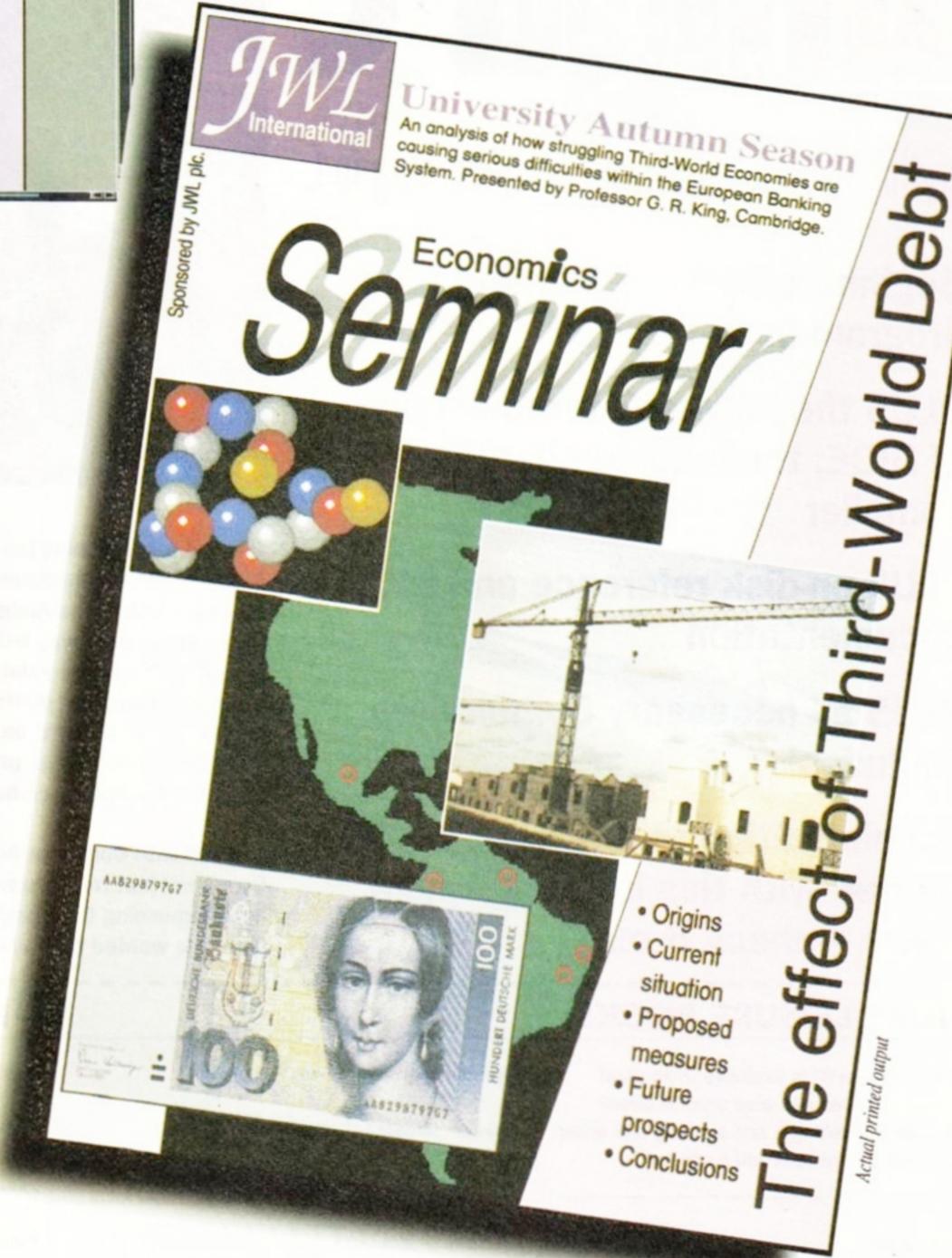


Unless, you buy an expensive PC or Macintosh, a high priced Colour PostScript Laser Printer, and a complex, costly Desk Top Publishing Package...

If you're looking for a quality Word Processor/Publisher that performs as well as this, you may well start by searching through PC and AppleTM MacintoshTM software catalogues.

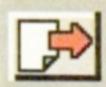
Even then though, you probably won't find a program that will combine the very best in Word Processing and... easy to use integrated DTP type facilities.

You certainly can't find software for your Amiga that's capable of all this...



... or Can You?





AMOPPER SHOPPER Complete Amiga C Amiga C

Everything you need to start programming in C

- ★ Beginners book on learning to program in C
- ★ PLUS the fully-registered version of DICE, the leading shareware C compiler
- ★ PLUS on-disk reference and DICE documentation
- ★ PLUS all necessary Commodore 'includes'

A sample edition of this book is given away free with this issue of Amiga Shopper – check it out!



C is the programming language of the professionals. Indeed, much of the Amiga's operating system was written in C. And C variants exist for all major computing platforms – once you've learnt C on the Amiga you'll be able to program any leading machine.

Our aim with Complete Amiga C was not just to produce a book explaining C for beginners. We wanted to provide EVERYTHING you need. Which is why we sought out the best shareware C compiler available – DICE – and secured a deal on the full, registered version. We also negotiated with Commodore to provide all the special C libraries and includes needed to program the Amiga properly.

In short, everything you need to program your Amiga in C is right here!

FUTURE LEISURE BOOKS

'Complete Amiga C' is available in all good bookshops, but you can also order it direct from Future Publishing – and sending this order form off won't even cost you a stamp!

Please send me:

......copy/copies of 'Complete Amiga C' at £24.95 each [ORDER CODE: FLB106A]

Amount enclosed £

Method of	payment	(please	tick	one):

isa Access Cheque P/0

CARD NUMBER

Expiry date:

Please tick here if you do not wish to receive direct mail from other companies:

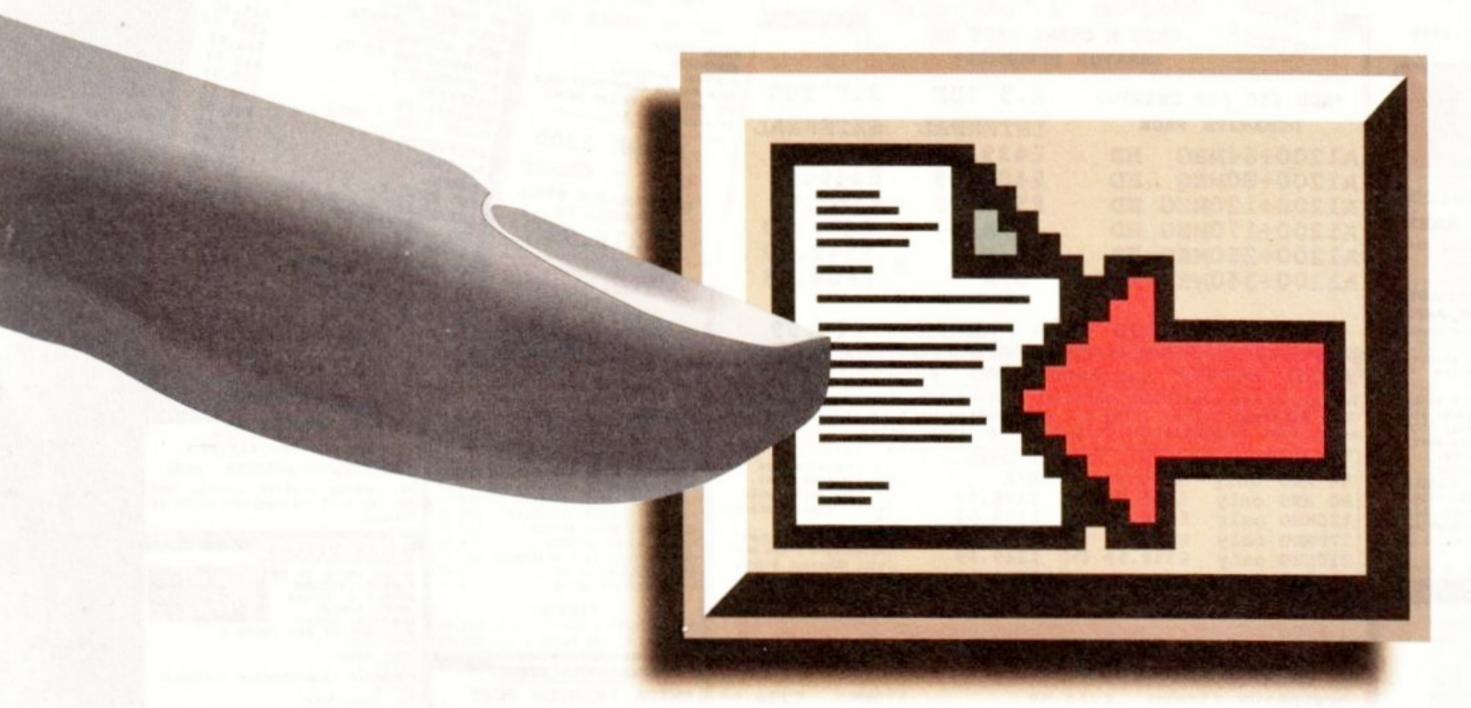
PRIORITY ORDER FORM

Now send this form and your payment to: Future Leisure Books Offer, Future Publishing Ltd, Freepost, Somerton, Somerset TA11 7BR

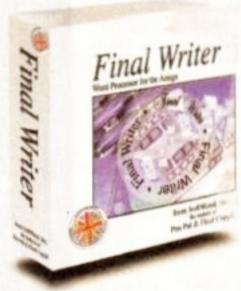
For office use only:

SCRATCH CODE: AS33

You Can Now... with New Final Writer™



Put Your Finger on the Buttons of the Ultimate Amiga Word Processor



From the publisher of the acclaimed Final Copy II comes its new companion, Final Writer - for the author who needs even more! If you already use an Amiga Word Processor, it won't include the complete and comprehensive array of features found in this latest addition to the SoftWood family.

Can your Word Processor...

Output crisp PostScript™ font outlines on any graphic printer (not just expensive lasers), and was it supplied with over 110 typefaces? Import, scale, crop, view on screen and output

structured EPS clip-art images (Final Writer is supplied with a hundred), again, on any printer? Also create structured graphics and rotate them along with *text* to any angle, giving you DTP quality presentation? Provide a huge range of printing options (eg. thumbnails, scaling, crop marks etc. on PostScript™ printers) and fulfil other advanced Word Processing functions easily such as automatic indexing, table of contents, table of illustrations and bibliography generation? With Final Writer, this



Superior font & graphical imaging technology. is now available to you along with a list of features that just goes on and on. We know that

you'll be impressed by this revolution in Amiga Word Processing, but don't be put off by it's advanced capabilities. With its complement of user definable Command Buttons and Superb Manual, Final Writer is simply one of the easiest programs to learn and use.

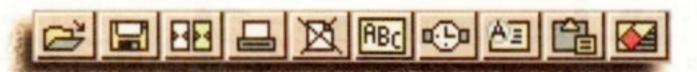
Final Writer is not just a one-off product...

SoftWood are acknowledged as the World's leading software company publishing for the Amiga and no other system. So, if Final Writer exceeds your current requirements - whatever your Document Processing needs, whatever your Amiga - SoftWood will still have the Perfect Package for you...

Pen Pal or Final Copy II and Proper Grammar II...a Complete Range.

Once you become a registered SoftWood user, you'll gain access to unlimited *free* UK technical support (others often charge you or don't provide support at all) and preferential upgrades to future versions of these and other exciting new products being developed right now.

SoftWood



Quality software for your Amiga

If you've outgrown your existing package ask about our 'trade up' options from your current Word Processor (other publishers' WP's are eligible too).

Copy II information 0773 83

SoftWood Products Europe



New Street Alfreton Derbyshire DE55 7BP England Telephone: 0773 836781 Facsimile: 0773 831040



.-

Please rush my personular printers.

Addres

Aressi.

Available from all good dealers or, contact us for a list of nationwide stockists.

All information correct at time of going to press, E&EOE. All Trademarks acknowledged. The document on the previous page was output on a low cost Canon Bubble Jet.



f, like me, you've got both a scanner and a printer that you use every day, you've got a problem. Both need to be plugged into the parallel port, and it is a real pain having to power down in order to swap cables. A switch box won't do: my Epson GT-6500 scanner insists on being connected directly to my Amiga's parallel port. What I need is another parallel port. And that's what the MultiFaceCard

CHECKOUT MULTIFACECARD 3

Documentation

000000000

Poorly translated from the German and way too technical for beginners.

Ease of Use

Installation and initial operation are easy, but it takes a while to learn the extra intricacies of the software.

Value for Money

Well worth the cost if you want the convenience of multitasking parallel/serial port peripherals.

Overall rating

Two extra parallels and one extra serial might have been more useful than the other way around.

3 has given me.

A simple command automatically added to my user-startup fools the Amiga into using the MultiFaceCard parallel port instead of its own, and because the scanner software dives straight at the hardware to access the Amiga's parallel port I haven't got to worry about telling software which port to use; it just happens. Not having to manually swap cables saves me about an hour or two per week in computer downtime, so the board will quickly pay for itself. Heck, I can even scan and print at the same time, another time saver.

Also on the MultiFaceCard 3 are two serial ports. A 9-pin sub-D connector is mounted on the rear bracket beside the extra parallel port, and a further 25-pin standard serial port is provided on a cable and bracket that can be connected to the board and slotted into another

00000000 SHOPPING LIST

MultiFaceCard 3£110 By: bsc büroautomation AG, Postfach 400368, 80703 München, Germany Distributed in the UK by: MicroPACE (UK) Ltd, Unit 10, Perth Trading Estate, Perth Avenue, Slough SL1 4XX **☎** 0753 551888

MultiFaceCard 3

bracket position. Alas, my A4000's Zorro slots are all spoken for, so if I want to use this extra serial port I will have to let the cable dangle loose out the back of the machine somehow. This will be less of a problem with the A1500/2000 of course because it has seven bracket positions.

Workbench 2.04 is a minimum requirement for the MultiFaceCard 3 software. If you are using Workbench 2.1 or better the software will install DosDrivers, otherwise it'll provide a file of mountlist definitions for you to use with the Mount command.

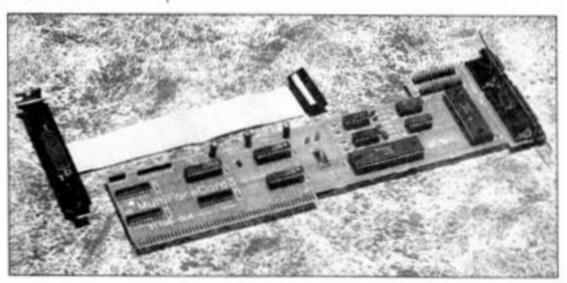
For controlling the extra ports there's just the one small CLI command, MapDevice, which is the aforementioned program that fools the Amiga into using the MultiFaceCard ports instead of the

Amiga ones. In effect the MapDevice command is used to switch output between ports, although it is far more sophisticated than this. The serial ports have a special preferences program so that the baud rate (up to 115,200) and

other protocols can be set. A special version of the ParNet networking software is included so that you can network two or more Amigas via the MultiFaceCard parallel ports instead of the standard Amiga parallel ports. The manual details the pinouts for the cable you will need to make.

Because the manual serves all versions of the MultiFaceCard and the SerialMaster board as well, it is a little confusing to say the least. But fortunately the MultiFaceCard 3 hardware and software are pretty simple to install. I was up and running with the extra parallel port in 15 minutes, although I think the serial ports and networking will take longer to master. And if you're into programming, developer notes and autodocs are provided.

Jeff Walker



Always wanted another parallel port? MultiFaceCard 3 can give it to you, plus serial ports, and networking!

Ifa Data products have a reputation for being well-made and reliable, and this new mouse and switcher live up to that reputation.

The mouse boasts ultra-high 400 dot per inch resolution - great for graphics or detailed drawing. The micro-switches too are of a very high quality, with a clean crisp click when you make a selection. There are a healthy five feet of cable, terminating

CHECKOUT MEGAMOUSE & SWITCHER

Quality Exceptional finish.

Performance ----

Ease of Use

Both work impeccably.

Beautiful, smooth and nice to use.

Value for Money Astounding. The Microsoft mouse costs £99, and this is as good.

Overall rating Rodent need replacing? Look no further.

Megamouse and joystick switcher

in the standard 9-pin moulded plastic plug, and the design is intelligently ergonomic and comfortable. This is a first class piece of equipment, which, when one considers the price, must rank as one of the best value for money accessories for your Amiga.

A matching unit is also available from Alfa Data which is primarily intended as an automatic switcher between joystick and mouse. This unit resembles the gender-changers often found on computer cables, and like those it has a 9-pin male port at each end. From the middle of the unit, however, emerges a one-foot cable terminating in a 9-pin female socket, intended for insertion into your Amiga's mouse port. Inside the unit itself is what I can only describe as a delightfully manufactured circuit board containing no less than three ICs and several assorted capacitors

00000000 SHOPPING LIST

Alfa Data Megamouse £14.95 Mouse/Joystick Switcher .. £12.95 From: Golden Image, Unit 12A, Millmead Industrial Estate, Millmead Road, London N17 NQU **☎** 081 365 1102

and resistors. There are two LEDs. one green and one red, which indicate which you have selected, mouse or joystick.

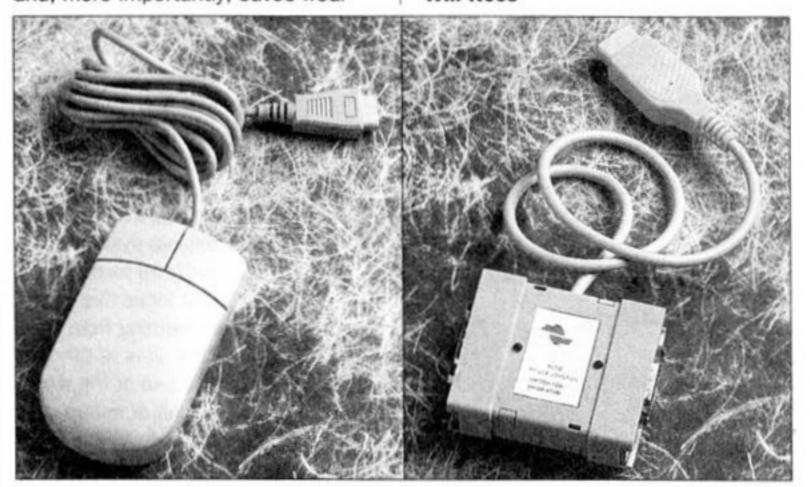
You simply plug mouse into one port and joystick into the other, then the cable into the appropriate port. The unit detects which device you want to use as soon as you press the left mouse button.

It works faultlessly, and adds a new dimension of speed and convenience to multi-player games and, more importantly, saves wear

and tear on the delicate connectors that you'd otherwise be putting at risk by repeated plugging-in and unplugging of leads.

I like both of these units so much I have ordered them. Take my advice, if a new mouse is on your shopping list and you want the added convenience of not having to struggle behind your Amiga amidst the plethora of leads and connectors. buy them both - they are absolutely first class.

Wilf Rees

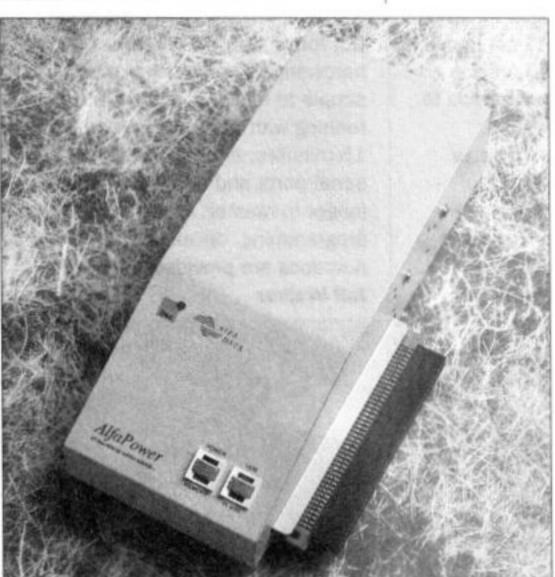


The Alfa Data Megamouse and switcher look fairly ordinary. But this is by a long way the best mouse I have ever used on either my Amiga or PC. Both pieces of kit for under £28 must be one of the best bargains this Christmas.

Alfa Power hard drive

DE hard drives are often
frowned upon, but in fact IDE
has a major advantage over
SCSI – IDE drives and
controllers are much cheaper.

For this reason, AlfaData chose IDE for a range of budget hard drives to market alongside their existing SCSI units. One or two drives can be mounted inside the thin steel case, relying on the Amiga for power and a



The Alfa Power – a budget IDE-system hard drive, with some corners cut but a respectable turn of speed.

draughty room for cooling.

Is this such a bad thing?

Commodore recommend that all peripherals have their own power supply and experts would argue the case for cooling DRAM – which tends to develop permanent amnesia if it gets too hot. A fan is not available, but the extra PSU (recommended if RAM is fitted) should be considered at £39.95 extra. The RAM expansion

using ZIPs – can accept up to 8Mb in total; nothing less than you should expect from a modern design.
 However, lack of a fan may shorten the lifespan of these expensive modules (£69 per 2Mb).

supplied includes a formatter and memory test utilities. At first glance, they look cheap – but few will find them a problem in practice.

Documentation in German and English

is set in the next

Software

point size up from microfiche: myopic buyers will have to resort to magnifying glasses. The translation is similarly average, but things go smoothly once you adjust.

On the down side, the attractive case has two tempting switches mounted right in harm's way.

Respectively these enable the RAM and hard disk – effectively making a game switch. (Does anyone need these things now?) Although they're not easy to catch, little fingers could crash the machine or cause strange boot failures. Not a major criticism, but one to be aware of.

AlfaData have cut a number of corners to bring hard drives to the masses and you might be forgiven for thinking these would lose in terms of speed too. Surprisingly, quite the opposite is true and once the tedious process of formatting

and configuration has been completed, the drive nips along at a respectable speed, though it's no GVP Impact. Pound for pound, the Alfa Power hard drive could be compared to the KCS dual-density, double-decker floppy drive that has a guaranteed capacity of 4Mb at around the same price (see opposite page). Think of that and you have a very cost-effective solution.

Mark Smiddy



Cheap, cost effective and simple.

Overall rating

Probably the best budget drive around.

Reference hard drive

o compete in the overcrowded A500-compatible hard drive market, any new model has to be cheaper, faster or otherwise better than the competition. The Reference, a SCSI-DMA design inside a tough steel case, at least looks hardier.

From there on though, things start to go downhill at an alarming rate. The separate "dumb" power

Reference

The Reference hard drive for the A500 – it's tough but noisy, and the external "dumb" PSU is troublesome.

module has to be switched on before the Amiga, thus allowing the drive a few seconds to spin-up and, more importantly, ensuring that the interface is present on the bus before the Autoconfig kicks in. The upshot is that you have an extra supply to turn on or off in the correct sequence or the Amiga will crash. As far back as the original Commodore A590, most designs have had a remote control PSU switched on

when the Amiga comes on line. Also, just like the A590, the Reference's cooling fan coupled with the drive make a very noisy combination.

Supplied software includes a backup system, a low-level formatter that looks like something from the dark ages of CP/M, and one of the worst pieces of set-up software I have ever seen. Quite what possessed anyone to use Inovatronics CanDo 1.6 is

beyond me. The software is not only slow and clumsy, but ugly beyond compare. The wild mixture of palette and styles would make Picasso blush and, more importantly, is almost unreadable on even a decent monitor. If that were not bad enough the low-level formatter proved unreliable, crashing the RDB on more than one occasion, meaning the whole process had to be repeated.

In use the drive proved generally unreliable when started from cold – although it worked well when running normally. All this could be forgiven if the Reference could claim to something in the speed stakes – but it fell short here too, in spite of the 100Mb hard drive which would normally give it an advantage over smaller units.

Like most modern expansions, the Reference is designed to accept extra memory – up to 4Mb. In light of

this Evesham recommend the use of their own Autoconfig memory expansion. This is weak and highly inconvenient too. The complete (8Mb) Fast expansion really should be on the controller if the Reference were to be a serious competitor; it isn't. It may be tough, but little else can be said about this hotch-potch other than to ask if it is going to make any mark in the market at all.

Mark Smiddy

CHECKOUT REFERENCE HD

Speed

Not particularly outstanding.

Ease of Use

Set-up software is temperamental and

not for beginners.

Construction

Among the toughest boxes to date.

Value for Money

It's cheap certainly, but doesn't offer much for the money.

Overall rating

Think carefully and consider the other alternatives.

Drive to destruction

Mark Smiddy examines the KCS dual highdensity disk drive - all hype, or the best thing since the non-stick frying pan?

Shopper I was charged with the task of choosing a drive for all seasons. Given that all Amiga drives are based on a rigid electronic standard, there is little to separate them. To resolve this, a specially-designed series of tests subjected the mechanisms to a variety of extreme physical and environmental stresses.

Three years later, little has changed. Most Amigas are still fitted with a limited double-density drive and the hardware is incapable of supporting the universally accepted high-density (HD) standard found on other platforms.

Power Computing were the first with an answer – the XL HD drive (reviewed in Amiga Shopper 29 – see page 106 if you want to order a copy). But what's the use of a standard that isn't supported by the vast majority of Amigas? Two uses come to mind: first, backing up a hard disk will require fewer disks (although there is little saving in cost terms) and second, it allows you to read and write high-density PC disks.

Netherlands-based Kolff
Computer Supplies, best known in
the Amiga community for their
ground-breaking Power PC board,
have now also addressed the
problem, and come up with some

interesting solutions. Their dual HD drive has been on the cards for a long time – but it was worth the wait.

A clever marriage of intelligent software and ingenious hardware results in a double-decker drive that's not only measurably faster than any comparable mechanism, but brings a Workbench-3-like filing system to every machine running Kickstart 1.3-plus and PC compatibility to all. Thanks to realtime compression, storage capacity is quadrupled to beyond 4Mb on an HD disk (best case) and increases the read speed an average exceeding 300% when compared to a standard machine. Counting these features, the double decker is not two drives, but eight rolled into two.

Software supplied with the unit includes a driver, installation program, replacement for the standard DiskCopy, extra drivers for the KCS Power PC card, simple hard drive backup, track display and special formatter. The formatter currently supports no less than 12 different capacities from 720K to 4Mb-plus. Plus facilities for FFS, International and DCFS filing systems - all usable on 1.2 machines! (FFS or Fast Filing System was introduced in AmigaDOS 2; Directory Cache Filing System or DCFS arrived with AmigaDOS 3 to provide faster

directory reads.) It's a pity there isn't enough room to list full details here.

PC disk

compatibility is internal – so there's no need for PC-Amiga file transfer software like *CrossDOS*, *MultiDOS* or *MessyDOS* – and the standard hardware is compatible with Cyclone T2, Blitz and Syncro Express hardware back-up systems. The nearest competitor requires at least Kickstart 2 to work and Kickstart 3 for full functions, and cannot achieve the speed of a standard machine.

Practically speaking it is difficult to find something the KCS system doesn't do. The software currently shipping at version 1.70 is due for upgrade before the end of 1993 and KCS promise better and faster compression with an improved hard drive backup sub-system. KCS plan to include an extra software driver to add the compression system to existing hard drive partitions – effectively doubling the storage capacity of all non-boot partitions!

Also for this version will be the ability to read and write two disks as a single device (or volume) doubling the possible capacity to over 8Mb (yes, eight) for HD disks. Although it will never replace a real hard drive, this makes it an even more attractive and cost-effective solution for media-greedy applications. In this sense, it could even be compared to a small removable hard drive - slower, yes, but a lot cheaper. Last, but not least, is a replacement for the slightly tacky interim manual. All registered users get all this automatically at no extra charge.

No review would be complete without some criticism – and the



SHOPPING LIST

KCS Dual High-density Drive £199

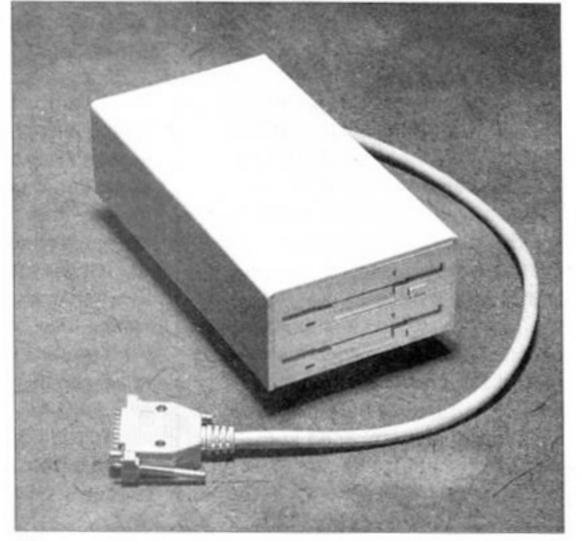
By: Kolff Computer Supplies

From: Bitcon Devices Ltd.,

88 Bewick Road, Gateshead,

Tyne & Wear NE8 1RS.

© 091 490 1919



Want a high-density disk drive for your Amiga? KCS's new dual HD drive can give you two of 'em in one unit.

KCS drive is no exception. It's let down by a poorly designed plastic case and a rear-mounted mode switch that's susceptible to little fingers. Also, the inclusion of copier hardware will furrow the odd brow, I have no doubt. On the software side, it would be nice if the compressed drives appeared as a straightforward dfx: rather than CMx: – but this is a minor irritation.

The bottom line is that KCS have done for floppy drives what GVP did for hard drives, and others will be hard-pressed to better it. This is the most innovative and singularly useful product I have seen since Amiga Shopper began. Save up, sell the wife and take out a second mortgage on your granny: your Amiga is crying out for one.

CHECKOUT KCS DUAL HIGH-DENSITY DRIVE

Speed

Drool over those results and wonder how you're managing.

Documentation

Interim manual is cheaply produced, but it reads well enough.

Ease of Use

delight to use.

Simple, logical and transparent – a

Durability and Construction

Treat with care – it won't take the knocks.

Value for Money

Enough said.

Eight drives in one – how can you go

Eight drives in one – how can you go wrong?

Overall rating

THE BENCHMARKS

Our tests were compiled using an extended, high-speed file copier, duplicating a mixture of 56 various length files and several directories comprising over 740K of mixed data. The KCS compressed drive timings shown for the 25MHz A3000 model, while not achievable on slower machines, are

Drive Read Write 37,805 209 21,110 DF2: CM2: 35,970 199 17,559 12,909 DF2: 33,228 183 18,072 6,123 DFO: 100 DF2: 17,073 4,453 94 DF2: 16,321 3,791 90

representative of the software's performance.

The table shows a selection of typical benchmarks. Relative percentages are based on a watershed Commodore internal floppy with a standard filing system on an Amiga A3000 running Kickstart 3.

			and the second second
%	F/S	Capacity	Manuf'r
344	FFS	1.76 Mb	KCS
286	DCFS	4.00 Mb	KCS
210	OFS	1.76 Mb	KCS
100	OFS	0.88 Mb	CBM
72	FFS	1.76 Mb	Power
61	OFS	1.76 Mb	Power
	344 286 210 100 72	344 FFS 286 DCFS 210 OFS 100 OFS 72 FFS	344 FFS 1.76 Mb 286 DCFS 4.00 Mb 210 OFS 1.76 Mb 100 OFS 0.88 Mb 72 FFS 1.76 Mb

Canon BJ230 bubble jet printer

ssentially, this printer is a BJ200 bubble jet with a longer platten and a wider case. That is to say, the

actual mechanics of the machine are the same but for the fact that they have been adapted to cope with a wide carriage.

This may not seem important, especially since it makes this model around £60 dearer than its little brother, but it does have potential uses. Laser printers, apart from very expensive ones, are limited to an A4 format, which makes them

The Canon BJ230 bubble jet printer - the winning combination of bubble jet quality plus a wide carriage.

particularly useless for spreadsheet work. Although most spreadsheet software has an option in the print requester to output in "landscape" format - that is, with the image sideways on the page - this means you get the width and not the height. Sure, ordinary dot matrix printers can handle wide carriage, but then you don't get laser quality resolution, which can be quite important, even on a table full of numbers.

As you would expect from a Canon bubble jet, the mechanism is quiet (you only know that it is on by

> the rustling noise the paper makes as it is sucked in), the footprint is small and the output fairly fast. You always have to take manufacturers' performance claims with a pinch of salt - it is more like three minutes per page than three pages per minute. (This isn't really the printer for people in a hurry.) At that speed it would take rather a long time to

deplete the stockpiles held in the automatic sheet feeder, which can hold up to 80 pages.

The print mechanism itself is very accurate - it seems to be of a much better quality than the original designs which appeared with the BJ10. The print quality seems to be much less dependent on the type of paper used, and with the software provided you can get a very decent range of shades.

The only real problem with the BJ230 is that if you use full carriage a lot, you are going to run out of ink a lot faster. Maybe a refill does only cost a couple of quid, but you don't really want to be fiddling around with nasty bottles of black stuff every hundred pages or so. Perhaps the time has come to start making the cartridges too just that bit bigger.

Nick Veitch

000000000

SHOPPING LIST

Canon BJ230£379.99 By: Canon Distributed by: Phoenix Computer World, Unit 2, York Towers, 383 York Road, Leeds LS9 6TA. ☎ 0532 350091

CHECKOUT CANON BJ230

Features

0000000000 Three print modes give a reasonable compromise between speed and quality. Otherwise it's the standard 360 x 360 dpi and excellent greyscales you would expect from a Canon BJ.

Documentation

000000000

The manual covers everything in extreme (sometimes tedious) detail, but it's always handy to have all the info.

Ease of Use

000000000

Built-in Epson emulation, and an appropriate driver is supplied.

Flexibility

0000000 Many will welcome the wide carriage.

Value for Money 000000000

A reasonably-priced solution to the conundrum of having a wide-carriage printer with laser-quality output.

Overall rating

I'd heartily recommend a Canon bubble jet to anyone, but if you don't need the extra inches, go for the cheaper BJ200 or the more expensive BJ600c, possibly the best-value colour printer available.

Epson EPL-5000

he EPL-5000 is Epson's latest laser printer. Lasers, as any fule kno, give you much better quality results than dot matrix printers, and have the added advantage of not waking the dead with the noise.

Epson have certainly done some serious work on the design of this printer. It's about two feet long and a foot high, with a panel on the front which lifts to reveal the paper tray, which can hold up to 250 sheets of A4. The paper feeds through from this and ends up on the top of the

printer, although you can get an optional tray which means that the paper isn't bent on its passage through the printer. This means that it can cope with thicker paper and overhead projector transparencies, which don't like being bent after printing.

The EPL-5000 can emulate three printers: the Hewlett Packard Laserjet, EpsonLX and EpsonQ. All three of these have Workbench drivers as standard, so setting up the printer shouldn't pose a problem. It comes with a parallel interface as

> standard, which includes a 32K buffer to speed up the flow of data (slightly).

Print quality from this printer is superb, with solid blacks and excellent greyscale rendering. Add a printer enhancement program such as TurboPrint or Print Studio, and the quality is even better. The maximum resolution is 300 x 300 dots

per inch, as with most laser printers. | afford PostScript, this printer is

As you'd expect, working at this sort of resolution requires a lot of memory on the printer, and the half a megabyte included by default isn't really enough for full-page desktop publishing work. This can however be expanded up to a hefty 6.5Mb, which is easily enough for high-resolution full-page DTP work. Epson claim a speed of up to six pages per minute, but if you're dealing with graphics (and DTP pages are printed as graphics) this is more likely to be six minutes per page. Pure text is extremely fast, and I've got no dispute with Epson's figure once it's worked up a head of steam.

Overall, this is a very impressive printer. Laser printers are rapidly becoming more affordable, and this one certainly won't do anything to tarnish Epson's reputation. There's no option to add PostScript to this printer, although it can use Hewlett Packard expansion cards for fonts and so on. If you don't need or can't

00000000 SHOPPING LIST

Epson EPL5000......£880 By: Epson UK Ltd, Campus 100, Marylands Avenue, Hemel Hempstead,

Herts. HP5 7EZ **☎** 0442 61144 definitely worth considering. **Richard Baguley**

CHECKOUT EPSON EPL5000

Features

00000000

Emulates a Hewlett Packard Laserjet IIP, EpsonFX and EpsonLQ.

Documentation

Epson's usual high standards have been maintained. Includes an excellent glossary.

Ease of Use

The included HP emulation means that you don't have to use any external

Flexibility

drivers.

9999999000

It's a good laser printer. What more do you want?

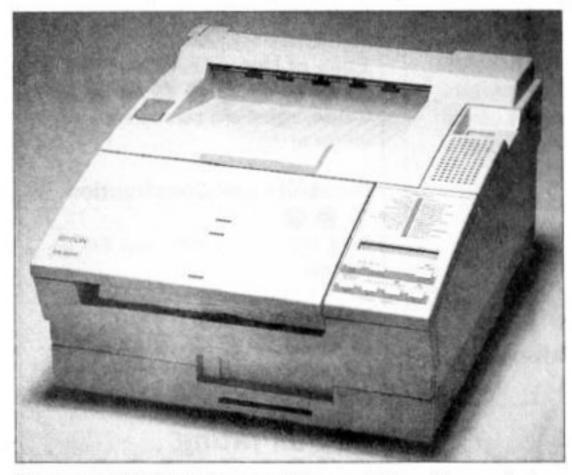
Value for Money

00000000000

Reasonably priced. Expect to see it for around £600-£700 from most retailers.

Overall rating 000000000

A good, solid printer. It's not the fastest or best laser on earth, but it's affordable and reliable.



Epson's EPL-5000 laser printer emulates three printers with Workbench drivers, so it's easy to get going.

CHECKOUT STAR LC24-30

Features

Can emulate both Epson and IBM printers, although the inclusion of Print Studio makes this somewhat

unnecessary.

Documentation **AAAAA**

Gives you all the technical gen you're likely to need, in a reasonably easy-tofind form.

Ease of Use

The Print Studio software means that it's very easy to set up.

Flexibility

The good range of fonts and built-in

single sheet feeder are extremely useful.

Value for Money

The list price is £350, but expect to see it for around £300 in the shops.

Overall rating

A good, solid colour printer which looks as if it could take the knocks and can produce good results, although it's a bit noisy for my liking.

ew from Star is the LC24-30, a 24-pin colour dot matrix. It's certainly good value for money in the pounds per pound stakes, weighing in at just under six kilograms and standing around seven inches high (not counting the sheet feeder) - so it certainly can't be described as a portable. Put it next to Star's dinky new SJ-144 and you'll see what I mean.

A single-sheet feeder is built-in, which can hold up to 55 sheets. although this does depend on the thickness of the paper. Fanfold paper can also be used, and this feeds through from the back of the printer. The control panel on the front has three buttons, using which you can load paper, change fonts, feed paper through or feed the dog.

Also included is a cut-down version of Print Studio, which includes a driver for the LC24-30. and this is very easy to install using

00000000 SHOPPING LIST

Star LC24-30£351.32 By: Star Micronics, Star House, Peregrine Business Park, Gomm Road, High Wycombe, Bucks. HP13 7DL. **☎** 0494 4711111

Star LC24-30

the Commodore Installer utility. This gives you a much greater degree of control over the output than a conventional Workbench printer driver, and includes a good range of dither patterns. As with all software of this type, the way to get the best results is to experiment.

The LC24-30 does have a "Quiet" mode, but it's still a noisy printer and using the Quiet mode slows down the print speed. The quality of the output is very good,

although there is a certain degree of banding on the printouts, caused by the paper being fed on the wrong distance, meaning that some strips are either printed twice or not at all. You can lessen the amount of banding by adjusting the printer, but you can't eliminate it completely.

The LC24-30 uses the normal fourcolour ribbon, and the colours are fairly good. They aren't particularly bright,

but there is a good range of tones in there, and some experimentation with the "Colour Adjustments" window of the StarPref program would improve this.

This is certainly a heavy-duty printer. It's well built, the print quality is good, and the text output is pretty fast (around 80 cps in letter mode). Unfortunately, the noise is extremely irritating, and would begin to grate after the first few pages.

Richard Baguley



The Star LC24-30 is a dot matrix with built-in colour capability, but it is noisy and certainly no lightweight.

ot matrix printers aren't exactly cutting-edge technology these days, but new models keep appearing. The latest from printer pioneers Epson is the LQ-100.

They've certainly had a rethink for this model. It's nearly completely

CHECKOUT Epson LQ-100

Features

....

Nothing particularly outstanding, I'm afraid.

Documentation

Up to Epson's usual high standard.

Ease of Use

Just plug it in and you're off.

Flexibility

A basic, but solid, printer.

Value for Money

Aimed at the budget end of the market.

Overall rating

000000 It's certainly a reasonable printer at a reasonable price, but nothing really distinguishes it from the many others in this price bracket.

0 dot matrix printer

enclosed, with the printing area covered by a removable plastic cover, which means it's significantly quieter than your usual dot matrix printer - the normal whine is still there, but much less loud.

Paper is fed into the machine by two possible routes: either through a single-sheet slot in the bottom of the printer or from a cassette at the front which can hold up to 50 sheets. The former can also be adapted to print on continuous paper with an optional tractor feeder.

The various settings (such as which font to use and loading paper) are controlled through two buttons on the front. The usual DIP switches are not present on this model, because Epson have assumed that the printer will be mostly controlled from the computer. Unfortunately, there isn't a driver for the Amiga which takes advantage of the new

00000000

SHOPPING LIST

Epson LQ-100£262.52 By: Epson UK Ltd, Campus 100, Marylands Avenue, Hemel Hempstead, Herts. HP5 7EZ

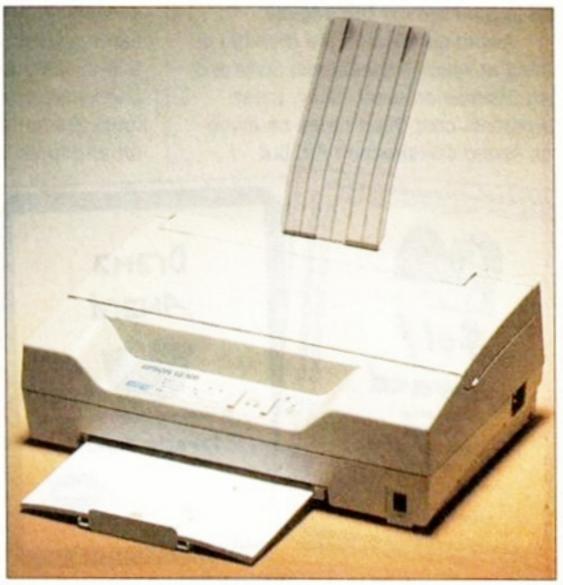
☎ 0442 61144

"Esc P2" control codes, but fortunately these are compatible with the standard Epson control codes used by the Workbench drivers. Unfortunately again, you're stuck with the old Workbench Epson Q driver, because Epson haven't included a Workbench driver with this printer, though it's worth trying printer enhancement programs such as TurboPrint or Studio (see page

72), which have support for some of the newer Epson Printers.

Like all 24-pin printers, the LQ-100 is capable of up to 360 dots per inch, and Epson claim a reasonable speed of 200 characters per second in draft mode. Put it into letter quality, though, and it drops significantly to around 60 cps. The text quality is very good, and seven fonts are built in to the printer.

Graphics, unfortunately, is another matter. The results are muddy, with some rather nasty banding. Some of this can be removed by careful adjustments to the paper feed mechanism, and the tonal range can be improved by using a printer enhancement program, but the quality is never going to be anywhere near what you can get with a bubble jet or inkjet printer.



Richard Baguley

The Epson LQ-100's enclosed casing muffles the noise you'd normally expect from a dot matrix printer.

Fujitsu DL1150 dot matrix printer

bookshelf, and hey, isn't it about

anyway?

time you learnt a second language

pins, can the dot matrix make a comeback against the bubblejet brigade? Fujitsu think it can, and if nothing else I have to say that this is possibly the best documented printer I have ever seen. Apart from the 150 pages of user manual, there is also a programmer's handbook of around 400 pages, detailing every possible function and operation that this printer could ever perform, every piece of maintenance you could ever want to do, every screw that might come loose. Okay, it is in

ow with wires instead of

A combination of fonts and styles give you a total of 15 different typefaces for text mode, although many of them are only available in the NLQ mode. Besides, a large number of resident fonts is no longer a big selling point. If you are printing out some high-speed text, it doesn't really matter what it looks like as long as you can read it, and if you are printing out a letter you'll probably be doing it through a program which uses a graphic

> If speed is your thing, the DL1150 can produce a fair 200 characters per second, but it is not the most legible draft mode I have ever encountered on a dot matrix. You will almost certainly have to splash out on some ear defenders as well perhaps I have just become too used to working with lasers and bubble jets, but the Fujitsu managed

which is a bad sign. There is a colour option, and it does produce surprisingly reasonable results - for a while anyway. The

to drown out the office CD player,

trouble with colour ribbon printing is that the ribbon is never long enough. The colours always migrate across the bands of the ribbon (in use, not in storage), so by the time you get to the third or fourth pass of the ribbon all the colours are brown anyway. Dot matrix printers have never been any good at colour though, so it is unfair to labour this point.

The Fujitsu DL1150 does come with the relevant Amiga drivers, so it is a very simple matter indeed to get it up and running with any software that supports a Preferences printer. There are a couple of fallback emulation modes too if you get into any difficulty.

Nick Veitch



.....£334.88

(colour version £386.58) By: Fujitsu, 2 Longwalk Road, Stockley Park, Uxbridge, Middlesex UB11 1AB. **1** 081 573 4444.



The Fujitsu DL1150 dot matrix printer - well, wire printer, really - has a quite usable colour option.

Award Construction Ki

ou're kidding. I mean, if you've done something worthy of receiving an award, wouldn't you expect to be given a decent award certificate you could hang on the wall, rather than a trashy-looking printout from Award Construction Kit with pictures and words that are all jagged around the edges?

Award certificates are the kind of thing at which Professional Draw and Art Expression excel. Okay, these programs cost three times as much as Award Construction Kit, but

PageSetter 3 doesn't, and it will even print at the highest resolution possible on your printer, without jaggies around the text and pictures.

The only thing ACK has going for it is ease of use. You can produce a certificate in under a minute, while in PageSetter 3 it might take five to ten minutes to import and position everything. With PageSetter 3 you don't get the range of border and text styles that come with ACK, but shareware clip art and Compugraphic fonts are not expensive, and all the art and fonts in ACK are available

> from EMC on other disks.

ACK provides about 50 standard award topics - sports, school, family and so on - or you can make up your own. Various areas of the page are designated to take either text or a graphic. You have quite a degree of freedom over text style, and 11 ornate

borders and five seals are provided. You choose styles and so on by number from various control panels. Dead simple. But it's all ragged round the edges. The boot sequence for the floppy doesn't even run SetPatch, just a few Echos, Setmap, LoadWB and EndCLI. Two hard drive installation scripts are provided so you can install the program on to either dh0: or dh1:. If your hard drive is called something else, you will have to do it by hand (though the manual does give step-by-step instructions). And the two installation scripts provided both automatically load sys:s/startup-sequence into Ed so you can add some Assign commands to that file. What a bloody stupid and irresponsible thing to do!

This is Amiga software at its very worst. It's not even up to shareware quality. There are a million better

Award Construction Kit £29.99 By E M Computergraphic, 8 Edith Road, Clacton CO15 1JU ☎ 0255 431389

CHECKOUT FUJITSU DL1150

Features

Reasonable 360 x 180 dot-matrix output. Colour mode can give results varying from poor to quite good.

Documentation

Pretty good manual with full information on emulation modes and everything else you could expect. Shame the programmer's / maintenance handbook isn't in English...

Ease of Use

basic though.

Comes with its own driver, but then it doesn't tell you how to install it. Pretty

Versatility

Okay for speed, reasonable for colour.

Value for Money

Far from the cheapest model on the market, but it looks as though it could outlast many of the other models (though you may go deaf).

Overall rating

A well-built, sturdy workhorse that can output decent quality pages. The colour option is quite usable if you don't use colour all the time or you are prepared to buy lots of ribbons.

CHECKOUT AWARD CONSTRUCTION KIT

things to spend £30 on. Like a week

in Sarajevo, for example.

Features

Jeff Walker

•000000000 All it does is produce very amateurlooking award certificates.

Documentation

•000000000 Trashy 12-page A5 booklet.

Ease of Use

An unborn child could use it.

Speed

But then it never takes long to do next

to nothing.

Value for Money

•000000000 Why bother when you can buy PageSetter 3 for a few pounds more and do it properly?

Overall rating

But then I guess simple things please simple minds.



Reckon there's a demand in the Amiga market for a program that produces printouts like these?



CLASS AMORED WORLD PERIPHERALS

NEW! - 50MHz A1200 ACCELERATOR + FEATURE CONNECTOR

FOR ALL AMIGAS

This extremely high quality Amiga genlock, from GVP, has an

intuition-based software control panel with full ARexx and command line interfaces. Easy to use the G-Lock genlock features many sophisticated attributes among which are:

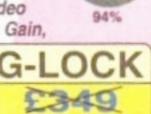
Two Composite Video Inputs or S-Video (Y/C) Input

Simultaneous Composite & S-Video and RGB Output

Video Processor - Real Time Software Control of Video Attributes (Sharpness, Gain, Brightness etc)

ARexx Compatible Works with Flicker Fixers

Multiple Keyer Modes Full Audio Support



G-LOCK

40mx 68030ec ACCELERATOR + RAM CARD & OPTIONAL FPU Own RAM NO FPU I 4mm RAM NO FPU I 4mm RAM 40mm FPU

ACCELERATOR - The 68030EC processor on A1230

Turbo upgrades the normal Amiga 1200 processor (CPU).

The new version is nearly nine times the speed of the

32-BIT RAM - The A1230 Turbo can have up to 32Mb of

MATHS CO-PROCESSOR - The A1230 Turbo can be

68020 in standard A1200s.

fitted with a maths co-processor.

Easy Fitting Trapdoor Expansion -Doesn't Void Your Warranty

Doesn't Disable PCMCIA Interface

faster than the obsolete 68881

Optional 68882 Co-Processor - much

68030EC processor running

Up to 32wb of 32-bit RAM

high speed 32-bit RAM.

GVP A1230

TURBO EXPANSION BOARD

ACCELERATORS 68030EC - 40MHz

68030 - 50MHz RAM/FPU + FEATURE CONNECTOR RAM/FPU UPGRADE

> The new GVP A1230-II is the most advanced accelerator for the A1200 yet.

- 50MHz 68030
- Built-in Memory Management
- Optional 50mHz FPU
- Up to 32Mb 32-bit RAM
- Unique Feature Connector

The new A1230-II has a custom feature connector which allows a whole range of stateof-the-art Amiga peripherals to be attached.

The first of these is a SCSI interface called the A1291, and is GVP's fastest SCSI controller yet. It features:

- DMA SCSI Design
- Faaast ROM Controller
- High Speed, Unique DPRC Technology for Direct HD to Memory Transfer

50mm One RAM | 50mm 4m RAM | A1291 SCSI ADAPTOR

FOR A1500/A2000/A3000/A4000



EGS Spectrum is the answer to all your 24bit graphics card requirements. It is a high resolution, 24-bit board that will take any Amiga 1500.

2000, 3000 or 4000 beyond AGA! But the hardware is only half of the picture. Without quality software, your investment will be wasted. Not only does GVP's own award winning graphics application ImageFX fully support EGS Spectrum, but also, using a Workbench driver, nearly all existing Amiga Workbench compatible applications will also work on and support the EGS Spectrum system.

- 1мь or 2мь of On-board Memory
- On-board Hardware BLITTER
- Future Re-targetable Graphics Support
- Zorro II or Zorro III Autosensing
- Scan Rates up to 80кнг 80,000,000 Pixels/sec Pixel Display Speed (8-bit)
- Programmable Display Resolution
- 320x200 to 1600x1280 Supports Data Transfer Rates up to 12мь/sec on Zorro III Systems

EGS SPECTRUM

Edo SPECINOW				
2Mb RAM				
£399				

FOR A1500/A2000/A3000/A4000



The HC8+ is a high speed hard drive & RAM card which can also be used to increase your Amiga's RAM

by up to 8Mb RAM. High Speed DMA SCSI Controller Can Handle upto 7 Devices

Ultra Fast Access SCSI Hard Drive Option - See Below

Supplied Unpopulated the HC8+ can be Upgrade to Give You up to 8mb of FAST RAM - See Below for Details

Direct Memory Access Style Design for Top Speed Transfer

HC8+ HARD DRIVE CARD Омь HD | 42мь HD | 80мь HD | 120мь HD 5489

RAM UPGRADE CARDS

GVP HC8+ INCLUDES 8 SIMM SOCKETS FOR EASY INSTALLATION OF FAST RAM. THE HC8+ WILL ACCEPT 2, 4, 6 or 8mb USING 2, 4, 6 or 8 SIMMS

1Mb SIMM £35 PER SIMM INC VAT - MEM 3628

FOR ALL AMIGAS



Capture sound from an external source and play it back in stereo or mono on your Amiga. The latest version of GVP's (DSS8+) enables you to create audio effects for use in games or jingles.

INCREASE THE SPEED

NEARLY 9 TIMES

New Style High Impact, Clear Poly-Carbonate Casing Simultaneously Holds up to 31 Sound Samples in Memory

Real-time Oscilloscope, Spectrum Analysis, Echo & Reverberation AREXX Compatible

 Microphone Input MOD File & MIDI Compatible FREE Samples Disk



GVP offer a range of



A1500/A2000 accelerators that simply outstrip the competition for speed and specifications.

42% QUANTUM HARD FOR SAVE £135! - MOUNT NOT PESA G-FORCE COOD 40.

	ACCELERATORS	030 40MHz	030 ЗЗМН
	Speed MIPS*	12.1	30
Г	Processor	68030EC	68040
	Matha Co-Pro.	68882 included	In 68040 processor
E	Std 32-bit RAM	4Mb	4Mb
E	Max 32-bit RAM	16Mb	64Mb
Г	Extras	SCSI	SCSI Ser/Par
	PRICE	£699	£1299
-	NAMES AND ADDRESS OF THE	mortiona / amounted in referent Arm	THE CASE OF MY LEGISLA

FOR THE AMIGA 1200



RAM allows you to enhance your Amiga 1200 with both. Its SCSI hard drive interface is one of the fastest, whilst its 32-bit RAM upgrade is based on the same technology featured in the bestselling A1230.

- Built-in, SCSI Hard Drive Interface -Enables 2.5" SCSI Hard Drives to be Connected Inside the A1200 Casing
- Optional 8мь of 32-bit RAM
- Optional 68882 Maths Co-processor

SCSI/RAM BOARD

NOW INCLUDES SCSI KIT FREE OF CHARGE

466 RAM - NO FPU 466 RAM + 33462 6862 FPU Own RAM



additional RGB, Y, R-Y and B-Y output.

which require you to buy extra modules later, IV24 has everything you could want from a video

IV24 is GVP's choices for in and outputting video signals than any other Amiga peripheral on the market. VIU-CT splitter provides

FREE SOFTWARE WITH IV24

Create stunning 3D rendered images, retouch captured images and wipe between 2 video sources with 50 packaged video transitions for production studio effects. Also included is MacroPaint 2, a powerful 24-bit graphics package which can paint in 16.8 million colours.

- 1.5Mb 24-bit, 16.8 million Colour Buffer
- Real-time Frame Grabber/Digitiser
- De-Interlaced, Video Flicker Fixer Moveable/Sizeable PIP (Picture-in-Picture)
- 2 Video Genlock (RGB & Composite)
- 768 x 580 Resolution
- Captured Image Retouching/Processing Animation/3D Rendering
- FREE!

Caligari 24, MacroPaint 2, MyLad and Desktop Darkroom Software



ALEGOVADOOD ADADTOD CAD DE CUA ESSA

A 1500/AZ000 ADAP TO	H 149.90 - GVA 5224			
IV24 inc VIU-S	IV24 inc VIU-CT			
E1499 COOO	E1899			
INC VAT - VIO 7024	INC VAT - VID 7124			



THE SILICA SERVICE

Before you decide when to buy your new Amiga products, we suggest you think very carefully about WHERE you buy them. Consider what it will be like a few months after you have

made your purchase, when you may require additional peripherals or software, or help and advice. And, will the company you buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. We can meet our customers' requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service".

- FREE OVERNIGHT DELIVERY: On all hardware orders shipped in the UK mainland.
- TECHNICAL SUPPORT HELPLINE: A team of technical experts will be at your service.
- PRICE MATCH: We match competitors on a "Same product - Same price" basis.
- ESTABLISHED 15 YEARS: We have a proven track record in professional computer sales.
- PART OF A £50M A YEAR COMPANY With over 200 staff We are solid, reliable and profitable.

- BUSINESS + EDUCATION + GOVERNMENT: Volume discounts are available. Tel: 081-308 0888.
- SHOWROOMS:
- We have demonstration and training facilities at all our stores. THE FULL STOCK RANGE:
- All of your requirements are available from one supplier. FREE CATALOGUES: Will be mailed to you with special offers and full details of
- hardware, peripherals and software. We accept most major credit cards, cash, cheque or monthly terms. (APR 29.8% - written quotes on request).



MAIL ORDER: 1-4 The Mews, Hatherley R Order Lines Open: Mon-Sat 9.00am-7.00pm (Sat 9.00am-5.30pm)	Rd, Sidcup, Kent, DA14 4DX No Late Night Opening	Tel: 081-309 1111 Fax No: 081-308 0608
CROYDON SHOP: Debenhams (2nd Floor), 11-31 North En Opening Hours: Mon-Sat 9.00am-6.00pm	nd, Croydon, Surrey, CR9 1RQ Late Night: Thursday - 9pm	Tel: 081-688 4455 Fax No: 061-686 4658
ESSEX SHOP: Keddies (2nd Floor), High Street, South Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm)	end-on-Sea, Essex, SS1 1LA	Tel: 0702 468039 Fax No: 0702 468039
IPSWICH SHOP: Debenhams (2nd Floor), Waterloo House, V Opening Hours: Mon-Fri 9.30am-5.30pm (Set 9.00am-6.00pm)	Westgate St, Ipswich, IP1 3EH Late Night: Thursday - 9pm	Tel: 0473 287092 Fax No: 0473 287092
LONDON SHOP: 52 Tottenham Coulopening Hours: Mon-Sat 9.30am-6.00pm	irt Road, London, W1P 0BA No Late Night Opening	Tel: 071-580 4000 Fax No: 071-323 4737
LONDON SHOP: Selfridges (Basement Arena), Oxfore Opening Hours: Mon-Sat 9.30am-7.00pm	d Street, London, W1A 1AB Late Night: Thursday - 8pm	Tel: 071-629 1234 Extension: 3914
SIDCUP SHOP: 1-4 The Mews, Hatherley P	Rd, Sidcup, Kent, DA14 4DX	Tel: 081-302 8811

_	-		_				_						
T	0:	Silica,	AMSHP	-0194-68,	1-4	The	Mews,	Hatherley	Rd,	Sidcup,	Kent,	DA14	4DX

PLEASE SEND ME A 64 PAGE	AMIGA COLOUR CATALOGUE
Mr/Mrs/Miss/Ms: Initials:	Surname:
Company Name (if applicable):	
Address:	
	Postcode:
Tel (Home):	Tel (Work):
Which computer(s), if any, do you own?	

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.

White Knight Technology





Credit Cards only.

PROFESSIONAL **AMIGA SPECIALISTS**

30992 714539 FAX

10am-7pm Monday - Friday 11am - 4pm Saturday

PO BOX 2395, WALTHAM CROSS, HERTS, EN8 7HQ

ALL PRICES INCLUDE VAT

AMIGA 1200 HD **A1200** + 64 MB Hard Drive

£ 439 £ 489 **A1200** + 85 MB Hard Drive **A1200** + 127 MB Hard Drive £ 519 £ 589 A1200 + 209 MB Hard Drive DESKTOP DYNAMITE AVAILABLE + £ 50

All A1200's are covered by WANG/ICL On-site Warranty

AMIGA 4000

A4000/030, 6Mb RAM, 80Mb	£ 1049
A4000/030, 6Mb RAM, 130Mb	£ 1099
A4000/030, 6Mb RAM, 250Mb*	£ 1169
A4000/030, 6Mb RAM, 340Mb*	£ 1249
A4000/030, 6Mb RAM, 420Mb*	£ 1359
A4000/040, 6Mb RAM, 130Mb	£ 1899
A4000/040, 6Mb RAM, 250Mb*	£ 1969
A4000/030, 6Mb RAM, 340Mb*	£ 2049
A4000/030, 6Mb RAM, 420Mb*	£ 2159

* Drive not covered by WANG/ICL On-Site Warranty

32 Bit SIMM MEMORY

1Mb 72 pin A4000/M1230XA/Derringer	£	45
2Mb 72 pin A4000/M1230XA/Derringer	£	85
4Mb 72 pin A4000/M1230XA/Derringer	£	160
8Mb 72 pin M1230XA/Deminger etc.	£	350
1Mb GVP GFORCE/A530/A1230	£	79
4Mb GVP GFORCE/A530/A1230	£	189

A2000

CSA DERRINGER 25MHz 08030 &		
MMU, with OMb 32-bit RAM	£	299
CSA DERRINGER - PLATINUM 50		
50MHz 68030 (optiional 50MHz 68882)		
With OMb 32 Bit RAM	£	449
GVP G-FORCE 40MHz 030, 4Mb	£	689
GVP G-FORCE 50MHz 030, 4Mb	£	989
GVP G-FORCE 33MHz 040, 4Mb	£	1279
CSA MAGNUM 28MHz 040/SCSI	£	849
RCS FUSION 40 28MHz 040	£	765

A1200 ACCELERATORS

GVP A	1230, 40MHz 030, 4Mb 1230II, 50MHz 030, 4Mb BOTICS M1230XA	-	395 579
WITH:	33 MHz 68030, MMU, 0Mb 50 MHz 68030, MMU, 0Mb	-	249 319

68882 FPU's

68882	33MHz PGA	£	109
68882	50MHz PGA	£	149
68882	33MHz PLCC - for A4000/030 etc.	£	99
68882	40MHz PLCC - for A4000/030 etc.	£	129

BERNOULLI DRIVES

150Mb Removable Cartridge Drive Internal 5.25" Drive + Cartridge	SCSI-2	2)
	£ 45	9
External Drive, Cable & Cartridge	£ 54	9
150Mb Cartridaes	£ 8	9

VIDEO PRODUCTS DIGITAL BROADCASTER 32 £Call

This Zorro III card performs the major functions of a full, broadcast quality, digital video editor. It provides REAL-TIME, FULL MOTION JPEG (25 fps) Capture & Compression, direct to disk. The captured video can then be edited and subsequently decompressed and played back in REAL-TIME, at 25 fps in broadcast quality, direct to video, laser disk recorder etc. Also included on the board is full SMPTE timecoding, read & write. The card also interfaces with the AD516 Studio 16, 8 track stereo audio card from Sunrize and the VIVID 24 Image Rendering Engine.

GVP IMPACT VISION 24

24 - Bit Professional Graphics board with Frame Grabber/Digitiser, Flicker-Fixer, Genlock & Picture-In-Picture etc. With Caligari 24, Macro Paint 2, MyLad, Scala & Desktop Darkroom software.

IV24 with VUI-S IV24 with VUI-CT	(RGB/Comp) (RGB/S-VHS)		985 279
HARLEQUIN With 4Mb Vram/dou			Y/C) 595
RETINA Display Card	4Mb	£	499
VLAB Y/C Real-time of		£	379
Rainbow III Display	Card	£1	499
Picasso II 24-Bit Care	d, 2Mb	£	329
Picasso II & TV Paint	2, 2Mb	£	489

垂375

Special Xmas Offer Price

AUDIO PRODUCTS SUNRIZE AD516/STUDIO 16

8 Track Stereo, 16-Bit, Better than CD Quality - Direct to Disk Recording, Editing & Playback.
Can be used in conjunction with the Digital Broadcaster via SMPTE.

£ 1249

HARD DRIVES A1200

80Mb & Cable	£	199
120Mb & Cable	£	219
170Mb & Cable	£	259

A2000/3000

40Mb SCSI 3.5"	£ 110
105MbSCSI 3.5"	£ 190
240Mb SCSI 3.5"	£ 295
345Mb SCSI 3.5"	£ 385
425Mb SCSI-2	£ 499
525Mb SCSI-2	£ 629
1.0Gb SCSI-2	£ 859
2.0Gb SCSI-2	£1299
	_

A4000

250Mb IDE 3.5"	£ 235
340Mb IDE 3.5"	£ 285
420Mb IDE 3.5"	£ 395

Ex-Demo. From	£	749
GVP PHONEPAK Voicemail & Fax Card	£	349
DKB 128Mb RAM Card for A3000/4000 (0Mb)	£	275
BSC MULTIFACE 3	£	109
EPSON GT6500 A4 COLOUR SCANNER	£	739

DELIVERY CHARGES

Express £ 6 Economy £ 4

SURCHARGE

If ordering with ACCESS or VISA, there is a 2.5% surcharge. No surcharge for VISA-DELTA, CONNECT or SWITCH.

HOW TO ORDER

Have your debit or credit card details at hand, and call:-

10am-7pm Monday-Friday 11am-4pm Saturday, Closed Sunday. OR BY POST TO:-

"WHITE KNIGHT TECHNOLOGY" PO BOX 2395, WALTHAM CROSS, HERTS EN87HQ

Drawing by description

Professional computer-aided design on the cheap? Pat McDonald looks at XCAD 2000.

ogether with a plotter or graphics printer, a CAD (Computer Aided Design) system can provide

printouts of object designs with an accuracy far superior to that of a human hand. And XCAD makes it easy as well.

You need at least 1Mb of RAM to run XCAD 2000, though a hard disk is not required. It's dongle-protected, but the dongle is only needed for certain operations like saving a drawing to disk. Interlaced display versions are included if you have the

display to make use of them, though they do run more slowly.

Run the program and you discover that it looks bloody hideous. However, you rapidly come to appreciate the fact that you asked for a professional CAD program and you got

one. In its own way, it's excellent. Although XCAD is an alphanumeric language that can be meticulously typed, practically every operation can be done with just the mouse. Input and output windows flash up and disappear, and if you just want a drawing area, you can turn the whole lot off. At first glance it looks totally word- and keydominated, but in fact XCAD is more like having someone give a running commentary on what you're up to with the mouse. It doesn't take long to stop worrying about the words and concentrate on your drawing.

Freehand artists, however, will probably still not be happy. The program is quite happy with working in miles and millionths of an inch. Or kilometres and centimetres. But XCAD 2000 uses a maximum of 16 colours - sorry, AGA owners. The picture elements are not square-



Although it may look 3D, this is a 2D perspective view of a 2D model, with hidden lines nicely removed.

edged rectangles but lines of variable thickness. Obviously scaling up and down is necessary, and with a CAD program you are absolutely dependant upon working on a grid.

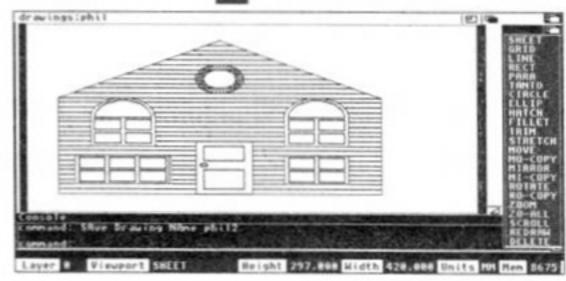
Those with an engineering or mechanical background will find XCAD much more approachable. CAD is not about producing stunning

graphics - it is about modelling objects to a degree of precision where they could be manufactured, given the technology.

So why is it better than using a

draughting board? Well, apart from the accuracy factor, there's also repetition. A human draughtsman has to draw every single nut, bolt, window frame and door knob unless they have made a stencil that they can trace. Copying bits of a drawing about on a computer is faster, and elements can also be stored on disk for later use. DM call these reusable bits of artwork "Symbols", and they have a few sets of standard items available - architectural and electronic schematic. As more people buy and use XCAD, I guess we'll see more. But the good news is, you can also import drawings and objects from AutoCAD on the PC (DXF format) via the PC-Amiga transfer utility CrossDOS. Sort of. It's not brilliantly implemented. Other output formats include Aegis Draw and Postscript. In addition, XCAD works with all Preference-supported graphics printers and HPGL, CPGL and RDGL plotters, if you are lucky enough to have access to one.

Once you have a view of a



The first tutorial, by long tradition a simple house picture. Takes about half an hour to work through.

design, you can load it into the 3D perspective modeller. It's nowhere near a true 3D rendering system, but it does let you get wireframe images (minus hidden lines) of a 3D model. You can output 3D models to Sculpt 3D and 4D. Those who wish to do a lot of work in 3D would be better off with XCAD 3000 - see the box.

This is an individual program that is ugly and not shy about it. If you persevere, you recognise XCAD's brute, solid strength. Once you have mastered the keyboard shortcuts, you can express the shapes in your head as fast as you could on paper and with extreme accuracy. Highly recommended.



But what if you want a real CAD program? One that reads DXF files much more completely than XCAD 2000 (though still not fully)? Go for XCAD 3000! But be warned, we're talking 700 pages plus of manual. And it does cost £249.99. And it needs 2Mb of free memory.

XCAD 3000 is much more 3D orientated and can output 3D objects in Turbo Silver format - very handy

for getting accurate models into a 3D rendering package. Shame it's not AGAcompatible, but 256 colours would slow it down. The redraw on XCAD 2000 is fast, but it's not on 3000.

Why is a CAD package better for designing 3D models for rendering software like Imagine and Sculpt? Quite simply,

scale. 3D programs usually do not use real units. So getting your nuts and bolts to the right scale on an oil platform is largely guesswork. XCAD can provide the 3D artist with a set of correctly-scaled models.

If XCAD 2000 seems deep, XCAD 3000 is an abyss. But personally I'll take a season in the abyss anytime. XCAD 3000 and Imagine is a potent combination.



In case you haven't seen what a combination of XCAD 3000 and Imagine can do, here's a clue...

CHECKOUT EXCAD 3000

Features

XCAD 2000.

000000000 A comprehensive set of 3D modelling commands. Not quite as punchy as

Documentation

00000000000 Heaps, but only a couple of examples.

Ease of Use

0000000 Takes even longer to get comfortable with than XCAD 2000.

Value for Money

0000000000 A snip compared to similar programs on other computers.

Overall rating 0000000000

Quite awesome on a powerful Amiga.

CHECKOUT XCAD 2000

Features

Reasonable, considering the absence of decent CAD packages on the Amiga.

Documentation

All there, in 450 pages. It starts simple, then throws you in the deep end.

Ease of Use

Maybe I'm being generous. You'll either

Performance

love it or hate it.

Zooms and redraws like lightning.

Value for Money

At this price, it's very good value for money.

Overall rating

Sacrifices some power in exchange for being user-friendly by CAD standards.

The PC chore...

If you want to run PC software on your Amiga but don't want to fork out for a hardware emulator, then a software alternative may be ideal. Wilf Rees boots up PC Task and runs a PC and Amiga at once...

ad but true: the commercial world is dominated by the PC, and there may be times when you want to bring work home with you but not lug a PC home as well. Or perhaps you need to to run PC software to do something that there isn't an Amiga equivalent for. There are hardware PC emulators you can add on to your Amiga, but these can be pretty pricey and their speed depends on the chip fitted in the emulator. Software emulators are a much cheaper option, and they take advantage of any accelerators fitted In your Amiga - so the faster your Amiga, the faster your on-board "PC", though software emulators in practice are still slower than real PCs in almost every respect.

PC-Task, distributed by Meridian, is a software emulator with the added advantage that your Amiga can both pretend to be a PC and simultaneously remain an Amiga – it multitasks perfectly, operating simply as another application screen. It needs at least 1Mb of RAM to run, but it supports two floppy drives as well as two hard disks, so the environment is pretty versatile. You can create files on any of your hard disks which act as pseudo drives, or use partitions in the normal way.

However, *PC-Task* does not come supplied with MS-DOS, so you'll have to buy this separately – version 5.0 or 3.3 is recommended.

Open up the disk window and you are presented with a collection of assorted icons. Three of these are self-explanatory, offering bootable options for the 68000, 68010, or 68020 and up - you choose the option corresponding to the chip in your own Amiga. An additional icon named TDPatch1213 is provided for people running Workbench 1.2 or 1.3. This routine fixes bugs and adds some features to the trackdisk.device to allow reading from floppy disks and writing to them when the emulator is

running.

Once the appropriate icon is activated, an option screen appears, on which you select system configurations. You can then create a configuration file storing your own settings and automatically loading to these preferences.

Assignment gadgets enable you to define your floppy drives as PC devices A: and B:. These by default are df0: and df1:, but they can be reassigned to any additional external devices if desired. Your assigned drives automatically configure as MS-DOS 720K, or 1.44Mb if you have one of the new-generation Amiga drives in the A4000 series. You can also define the Amiga's parallel and serial ports as LPT1 and COM1 respectively – the PC device names.

PC-Task will emulate four

different PC display standards, MGA is monochrome text only, which gives pretty fast text updates. There are only two colours available, and these can be selected by slider control. CGA is the default setting, and the most widely compatible. EGA allows both MGA and CGA modes, and also additional higher graphic

modes, to run. The

The feature that makes PC-Task really useful – no problem with multitasking whatsoever. This is the PC program Autodesk Animator running under emulation with the Workbench screen behind. "Running" may not be the right word though: it is really really slow!

only cost is speed. VGA will do all the other modes. If you have an A1200 or A4000 with the AGA chipset, naturally you have access to additional graphics modes. VGA has better palette definition, with the ability to pick 256 colours from 256,000, but sadly Amigas with the older ECS chipset will only have the option of four.

To get optimum performance when you wish to multitask, two options are provided to control processor allocation. "Priority when Selected" gives priority to the emulator when it is active and "Priority when not Selected" gives it priority when running as a background task.

The final option on the startup screen is one for memory allocation. This enables you to assign determined amounts of memory to the emulator, up to 704K. Setting the level too low will cause *PC-Task* to slow down, then fall over.

If you need help, the documentation is particularly good and very comprehensive. There is a very logical sequence of explanations for all of the functions of the software, a glossary and fault-finder to guide the novice, and lots of DOS routines to help with configuration and installation, as well as a list of the principal MS-DOS commands.

Advanced users can choose the option of adding additional commands not available on the startup screen. These need to be

accessed via the Shell, and allow several options.

The simplest command enables you to bypass the options screen once all preferences are assigned. A further command offers sympathy to those with old ECS chipset machines with Chip (graphics) memory only: it limits the maximum screen depth which *PC-Task* will open.
Unfortunately this is a trade-off: limiting the depth will speed up the program, but the price is a reduction in number of colours available.

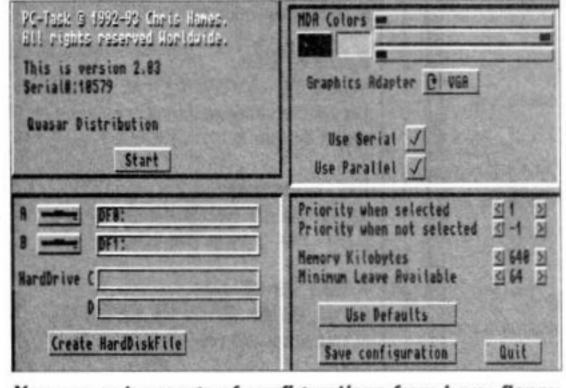
If your Amiga has internal hardware offering additional serial or parallel ports, you can assign the default operations to secondary ports rather than occupying the main outlets. Default fonts can be assigned, as well as instructions to direct *PC-Task* to get PC memory from Fast RAM. This is only of use, of course, if you have more Chip memory than Fast RAM.

Anyone with a A2000 still fitted with a 5.25-inch disk drive might want to assign this as a drive, and I found it worked okay. Alternatively, if you have an external 5.25-inch drive which is switchable between 40 and 80 track, this will work too, but only if you add a command to your Devs:mountlist file. A final provision allows for CD-ROM support, or so the manual claimed, but try as might, there was no way I could persuade mine to read PC CD-ROMs. I suppose, in all fairness, the manual did say it was a pretty basic driver, but for me too basic.

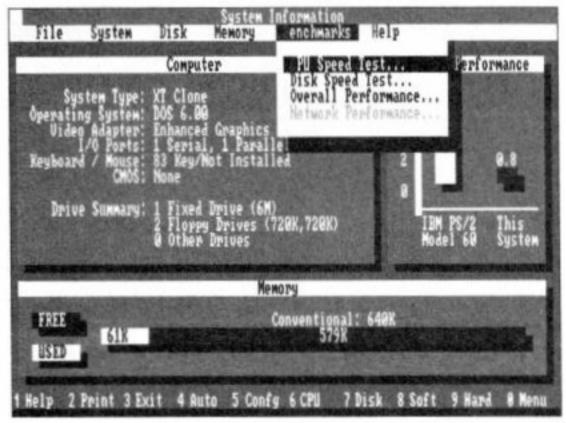
DIRECT INJECTIONS

Two further useful options are the ability to prevent the mouse pointer from turning off, and a routine which prevents checks for valid boot codes, just booting directly from any MS-DOS floppy.

An invaluable addition to the program is a mouse driver. You turn this on just before loading a PC program by pressing <left Amiga>-P, and the effect is that the original Amiga mouse pointer replaces the rather boring block cursor synonymous with PCs. An even better solution than this however is to use the utility PCTMouse, supplied with PC-Task. This should be installed in the AUTOEXEC.BAT file on the virtual disk you create. An AUTOEXEC.BAT



You can set a range of configurations from here: floppy disk and hard disk assigns, user port allocations, graphics display, memory allocations and processor options. Lots more preferences are available, but these need to be entered directly via the Shell.



Curious to see the real performance of PC-Task? Central Point's PC Tools system info compares the performance of PC-Task against an IBM PS/2 model 60 - a basic 286 machine, not particularly renowned for its speed. The PC-Task performance was .8 compared to 4.6 for the PS/2 - six times slower. No points to score, but my 486DX2-66 comes in at 87.9.

file is the PC equivalent of your Amiga startup-sequence.

ACTION SPEAKS LOUDER THAN WORDS

Once you're past all the set-up procedure, the crucial question is how good is it? The answer is more complicated than a simple good or bad. PC-Task is a pretty remarkable bit of software, but you can't expect miracles from emulation software. In the first place, it is a difficult job cajoling the Motorola 68000 family of processors used in Amigas to perform tasks designed for completely different processors - the Intel 8088 or 8086 in early PCs, the NEC V20 or V30 in later machines, or the more recent 386, 486, and the newest generation of Pentium processors. Any program that makes a lot of hardware calls is going to be

hard to fool, and even in the best case there is an unavoidable speed penalty.

It really boils down to what application you want to use. If you want to use your PC word-processor from work, PC-Task should give acceptable performance that will enable you to work at home. If you think you are going to run Windows and exotic PC applications, forget it. The lack of speed is just too

unbearable. This new version of PC-Task is an improvement on earlier releases and is slightly faster, but nothing like enough to run graphicbased programs. I got Autodesk Animator to run, but the screen refresh was so slow as to make the program unusable. Similarly, if you want to run PC games, you'll find that often these are written in nonstandard modes, and PC-Task struggles to support them.

That said, however, this is by miles the best software PC emulator available for the Amiga. If you are patient and laid-back, you will both get along fine. If you want to utilise the facilities offered by top-end PC programs, then sorry, folks, but a hardware solution is the only answer. Even the modest price of PC-Task could help you on the way to buying a second-hand Commodore A2286 card, an altogether faster and more

000000000 SHOPPING LIST PC-Task£49.95 From: Meridian Software Distribution, East House, East Road Industrial Estate, East Road,

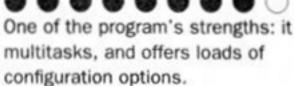
London SW19 1AR.

☎ 081 543 3500

efficient beast, or maybe a Golden Gate 386 or even 486 card, but then you would need a A2000 or higher to fit them. Other hardware emulators are available such as the AT-Once or the KCS, suitable for A500s or A600s. The choice is yours.

CHECKOUT PC-TASK

Features



Documentation

Excellent, with loads of useful tips on MS-DOS.

Ease of Use

Dead easy to use - after all, PCs are

designed for morons - but so slow!

Value for Money

Got to be one of its best points.

Overall rating

The best of the software solutions to PC emulation.

erhaps the most exciting branch of computer graphics is ray-tracing - to render a "3D" picture, your Amiga treats objects as geometrical solids with defined surface textures, lit by specified light-sources, and then calculates how the light rays from those sources would define those objects. You can get stunning results, complete with lifelike shadows and reflections. Whichever

CHECKOUT ACCUTRANS 3D

Features

The software allows extensive control

over the output of the final model file.

Documentation

The manual covers all the necessary information, but is a little difficult to read. The Amigaguide.library helps a

great deal for interactive tuition.

Ease of Use

Apart from the large array of buttons, overall the process is fairly simple.

Value for Money

Worth buying if you're into rendering.

Overall rating

Until 3D rendering programs can agree on a standard, this will be invaluable.

3D modeller or ray-tracer you choose, rendering an image is very time-consuming, but that is not the main problem. Various programs differ in their support for the range of Amiga hardware options - display boards such as DCTV, Harlequin, Firecracker, and so on, for example - so you may find that for different stages of the process you'd prefer to use different packages. It may be that rendering your 3D model could be better done on one program and the initial modelling on another. Or you might like to adapt an object created with one package and use it in another. The catch is that the programs available use different file formats. Enter AccuTrans 3D.

AccuTrans 3D enables translations between various 3D modeller/ray-tracer programs' file formats. These include Imagine, Lightwave 3D, VideoScape, Modeller 3D and Sculpt 3D/4D, with Aladdin 4D and Caligari 24 soon to be supported. AccuTrans also supports DXF (Drawing eXchange Format) files, which are considered a standard format for vector-based drawings.



cculrans

DXF support will enable you to import convert a wooden object into a glass your files into various programs, such as XCAD 3000, AutoDesk 3D Studio, and AutoCAD. DXF support is very useful, because if you are lucky enough to have access to a PC running AutoDesk 3D Studio, then you will appreciate the vastly improved rendering times, even on a basic 386 equipped with maths coprocessor. AccuTrans 3D will work on any Amiga with Workbench 2.04 or higher and 2Mb or more of memory. Although an accelerator is recommended, it is not necessary. A hard disk is useful, because 3D files

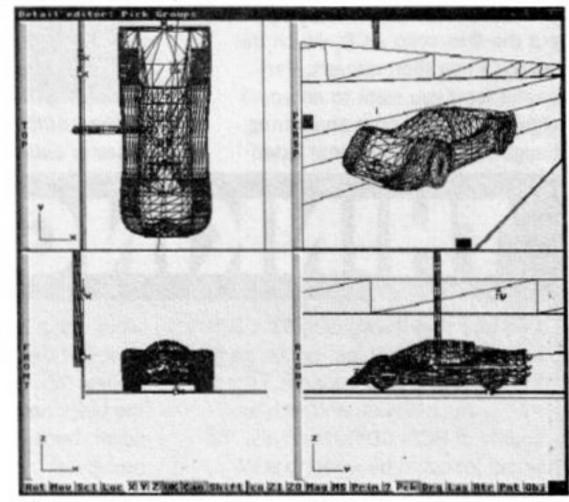
consume heaps of disk space.

As well as converting between various 3D file formats, AccuTrans 3D also enables you to modify various aspects of the 3D models being translated, such as the index of refraction for various transparent materials, or the colours of individual objects. The settings for conversions can be altered to your preference - so, for example, you could

object. A useful list of transparent materials and their equivalent refractive indices is included. With this, you can specify that an object is made out of diamond or ruby.

All of the conversion tests between the supported programs seemed to work, with a high degree of reliability. The only problem I encountered was the omission of some faces while converting Imagine files to DXF files. Apart from this minor problem, all seemed fine. A very handy utility indeed.

Wilf Rees



This model was saved as a DXF file from AutoDesk 3D Studio, converted to an Imagine file using AccuTrans 3D, then loaded into Imagine's Detail editor.

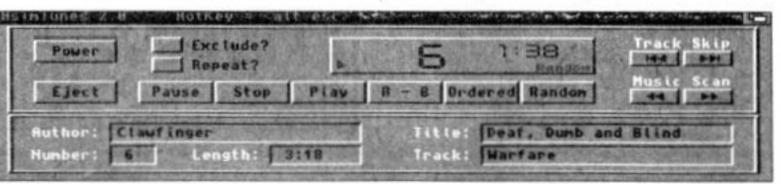
Scan the silver disks

Want to add a CD-ROM to your Amiga? Pat McDonald looks at the **ASIM Compact Disc Filing System.**

t's five AM, I've just spent the entire night looking through literally gigabytes of data on CD-ROMs and CDTV titles, and it could hardly have been simpler.

The ASIM Compact Disc Filing System (CDFS) is a rather neat collection of drivers and utilities to enable you to hook up a SCSI CD-ROM drive to your Amiga, provided it's equipped with Workbench 2.x and a SCSI hard drive interface. Also, purposes it's too small scale.

Other people may consider ASIM CDFS's ability to read CD-ROMs much more useful. Not only can it read the standard ISO 9660 CD-ROM standard used by Amigas and IBM PCs, it can also read Apple's High Sierra format. So if you have the relevant machine or an emulator. then you could (in theory) use foreign CD-ROMs. In practice, you would probably have to spool the data off



It's a real shame that AsimTunes, the music CD management utility, can't read track, album and artist's names off a CD. At least any of the ones I tried.

CDTV and CD32 owners can use one to a hard drive and access the of the utilities, AsimPhoto, to read Kodak-CD picture files and turn them into 24-bit IFF picture files. Wow!

However, you need a few megabytes of RAM to produce a PAL interlaced 24-bit image (768 x 512). Plus, the resulting image probably won't fit on a standard floppy disk. Don't get me wrong. I think this is the most useful feature. It means that anyone who needs some prints or negatives turned into excellent quality Amiga graphics can do it without spending a fortune on a scanner - your local Kodak film processor can scan the pictures and put the files onto a CD, which this program can then convert. Very useful for if you want to do some high quality DTP on a shoestring budget, although for most video

information from there. Even then full compatibility isn't guaranteed. All ASIM CDFS claims to do is give you access to the data on CD-ROMs. It do anything with the information.

AsimTunes is a bundled utility to make using your music CD collection as painless as possible. Which isn't

makes no claims about your ability to

CD-Rom device: V. Fast Directory Search? V Direct Reads? V | Autostart AsimTunes? # Rutostart DiscChanger?
Rutoboot from CD-Run? SCSI Device: VI Ignore LUNs on open? Combine multiple LUNs? Vendor: Maxtumum LUN Product Next Page Save Cancel

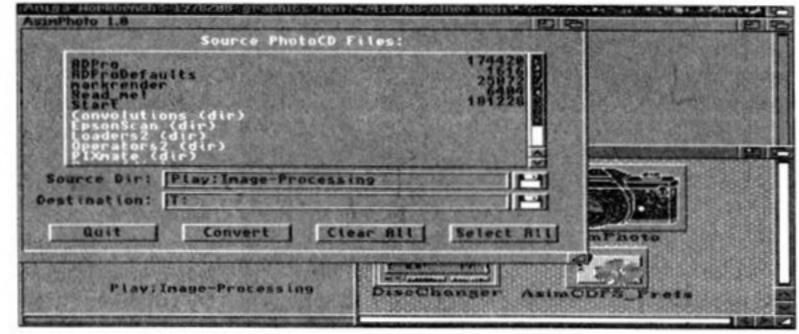
Getting ASIM CDFS going is largely a matter of telling it what your SCSI driver is called and which SCSI unit the CD drive is operating on.

One inventive application for CDFS would be to use it and an Amiga as the heart of a DJ's console. Fitted with a touch-screen and with a couple of SCSI CD-ROM drives, the whole lot could be wired to a PA and cross-fader without much difficulty.

What's the advantage? Well,

using AsimTunes, all you have to do is select the track, hit Play and Pause. You don't have to remember the track name or peer at the album cover, because AsimTunes recognizes and displays this information anyway (or at least it does after you have typed it in the first time).

Cost would be competitive compared to a dedicated DJ rig, and although it wouldn't play vinyl records, you could mix the Amiga's sound output as well and throw in your own jingles and scratches. Good idea, innit? Thanks to Daren Oliver for that and other help with these reviews.



The wonderful AsimPhoto program, designed to read Kodak-CD picture files and turn them into 24-bit IFF picture files. Shame I didn't have any...

much. Basically, you have to sit down with your collection and feed it one at a time through your CDFSequipped Amiga. The computer reads the number of tracks and the length of each song, and you then have to type in the name of the album, the group and each track's name. You can alter the playing order or skip tracks that you don't like.

Once you have saved the resulting database file, the software will recognize the CD next time it's put in the drive. Click on Play and off it goes. I had the impression that all the relevant information was read automatically off the CD. But no, you have to type it in.

I was hoping that this product would let me convert the digital information from a music CD into an Amiga sound sample, but again I was disappointed. Pity. Such a capability would have knocked spots off a conventional sound sampler.

One good thing is that all of the functions of ASIM CDFS can be linked to an ARexx port. I've got no complaints at all about this part of the manual, although a few examples would have been nice for novices.

You do get one free CD surprise surprise, the Fred Fish collection on CD-ROM. If you have never encountered it before, then you can spend many happy hours transferring the programs to floppy and watching them crash, because a lot of them are horribly out of date compared to the sort of Amiga you need to use ASIM CDFS.

In fact, that's the main problem with CDs. All the information you can currently get on them is available on floppy or printed in a book. If you could get titles like "How to hit AGA and AAA Amiga hardware", something that you couldn't get in a book, I might be tempted. As it is, I can't really get excited about a medium that you can't record on and that has a transfer rate slower than a motorway-mashed hedgehog.





Features

8 8 8 8 8 8 8 8 0 0 Overall quite a good selection of tools.

Documentation

Good, but a bit economical with the truth in parts.

Ease of Use

00000000000 Tricky to set up at first but plain sailing after that.

Performance

guarantees.

8888888000 Gives access but absolutely no

Value for Money

the job quite well.

8666660000 The software's reasonable, but SCSI

CD-ROM drives ain't!

Overall rating If you need to hack CD-ROMs, this does

PP LASERJET III™ COMPATIBLE • FLASH ROM UPGRADEABLE!

Ricoh, have used their expertise to produce a 'first' in laser printers, the LP1200 with FLASH ROM. HP LaserJet III™ compatible, the LP1200 employs industry proven laser technology which, unlike LED printers, uses a laser light source to produce the most accurate and intense printed images at a range of print resolutions up to 400dpi. A fast efficient processor and engine, plus a straight paper path design allows printing at a full 6 pages per minute. The 2Mb RAM version prints a full A4 page of text or graphics at 300dpi. Using standard resident fonts and the alternate controller firmware supplied, it can also print an A4 page of text or A5 page of graphics at 400dpi and, using the Windows driver supplied, an

A4 page of text at 400dpi from Windows 3.1.





BEST BUY

ASSET PRINTER AWARDS

hat to Buy



The LP1200 is the World's First Laser Printer to have the option of being upgraded to a PC independent plain paper fax. Just download the software (£120-var) into the LP1200's Flash ROM and connect any fax/modern to the Serial Port (we recommend the Pace Microlin FX -£180-var). Using the Windows and DOS software supplied you can send and receive Laser quality faxes all over the

FAX/MODEM SOFTWARE FEATURES - £120-VAT - FAX 1200

- Combine 2 or 4 faxes onto one page (A4) Greyscales, 3 types of images
- Photographic, Line Art, Ricoh Scanned
- Phone number directory (using Windows driver). Broadcast (using Windows driver)
- Windows and DOS version
- Receive faxes when PC is switched off
- Use printer for printing while receiving taxes in background mode. Use LaserJet or Layout protocol documents
- Send faxes from any Windows application

MODEM/HARDWARE FEATURES - £180-VAT - MOD 7199

- CCITT Group 3 send/receive Laser quality output
- Automatic retry on busy (x3)
- Memory useable 2w (upgradeable to 4w)
- Document macros
- PCMCIA/Intel flash card firmware module available A4 paper - but can receive A3 pages scaled down to A4 - 300 dpi.
- Can send A4 pages scaled upto A3 300 dpl
- Out of paper receive 9600 baud Fax modern
- 2400 baud Data modern
- Hayes compatible UK manufacture
- 5 year warranty on modem
- Includes: fax/modern, software, mains adaptor, serial cables. PSTN connection lead and manuals

FOR PCs & COMPATIBLES ONLY

VINDOWS 3.1 SUPPORTS 300 & 400cm

AMIGA DRIVER

6693

360 x 300

бррт

NO

YES

YES

YES

Tse

25 secs

15 secs

14

YES

YES

YES

YES

150

2.0p

60-157

YES

35dB(A)

45d8(A)

£929

300 x 300

бррт

YES

YES

Tue

33 secs

10

200

YES

1.9p

60-163

YES.

38dB(A)

50dB(A)

CORPORATE SALES TEAM

Tel: 081-308 0888 Fax: 081-308 0608

6683

300 x 300

дррт:

YES

YES_

YES

YES

Two:

60 secs

18 secs

14

YES

YES

YES

YES

200

YES

60-135

<43d8(A)

<53(8(A)

E&OE All Trademarks are acknowledged

400 x 40

45 secs

YES

YES

YES

YES

YES

YES

<3848

<4808

YES

2659

300 x 300

4ppm

DNLY FACE UP

YES

512K

<60 secs

31 secs

YES

YES.

60-105

YES

c43dB(A)

c53dB(A)

ø	6 P	AGES	PEF	3 IVIII	NUTE	
	2111	PAM	AC	STA	NIDAE	21

- Upgrade to 4Mb RAM only £85+VAT see below
- PCL5 INC HP-GL/2 With scalable fonts and vector graphics
- SHARP EDGED PRINTING
- Ricoh FIAL (Fine Image ALgorithm) enhances resolution 400dpi RESOLUTION
- (Default res. 300dpi. Will address 200, 240 & 400dpi)
- UNIQUE FLASH ROM
- For controller upgrade and storage PCMCIA CARD SLOT (PCMCIA/EIDA Compatole)
- For programmable FLASH ROM cards EXPANSION BOARD SLOT For improved connectivity eg. Coax/Twinax, PC-LAN etc
- LAYOUT Document Description Language
- SERIAL + PARALLEL PORTS
- 1 YEAR ON-SITE WARRANTY

Next working day response

FREE DELIVERY

SINGLE BIN & RAM

+ VAT £703.83

RAM UPGRADE - 2Mb to 4Mb (LAA 5282) £85 + VAT UNIVERSAL FEEDER

FAX OPTION Requires a modem

(LAA 5238) £85 + VAT (FAX 1200) £120 + VAT

60-169

MODEM Pace Mocrolin FX for Fax Option (MOD 7199) £180 + VAT

	COLUMN .	
10	-	10
16		183
	E	
18	FRADS	8/3

SHOWN WITH

UNIVERSAL FEEDER

TOP TRAY (OPTIONAL EXTRA)

The 4Mb RAM version can print a

full A4 page of graphics at 400 dpi and makes

intuitive document description language as standard. This offers unique opportunities to

develop custom made printing systems.

Forms and document templates can be

designed complete with logos and stored

electronically in the LP1200's FLASH ROM,

alleviating the need for pre-printed forms!

The LP1200 comes with a 100 sheet A4

paper tray as standard. An optional universal

feeder automatically feeds up to 150 sheets

of paper (up to 169gsm), 15 envelopes,

CONSUMABLES + ACCESSORIES

FAX 1200 Ricoh Fax/Modern Software/Firmware £120.00

MOD 7199 Pace Microlin FX Fax/Data Modern .. £180.00

All Prices are Exc VAT - CALL FOR A FULL PRICE LIST

"Note: A4 paper tray is stready included in the printer price. More A4

trays can be purchased to feed different coloured stationery.

PRODUCT

DESCRIPTION

transparencies and labels.

CAB 7500 Cable for PC/ST/Amiga

LAA 5262 2no RAM Module

KIT 5200 Laser Starter Kit inc Cable...

LAA 5238 Universal Feeder (2nd Tray).

LAA 5210 Developer/Toner Cartridge

LAA 5312 A4 Paper Tray (100 Sheets).

LAA 5286 Ricoh Flash RAM Card (1se) ...

LAA 5290 Ricoh Flash RAM Card (4nn) .

LAA 5279 Ricoh Flash ROM Card (0.5sa)

LAA 5225 OPC Cartridge (Drum) ...

PRODUCT

full use of the LP1200's 400 dpi printing capabilities, such

as using Microsoft Windows fonts. Unique additional standard

features include FLASH ROM 'future proof' technology and LAYOUT - a powerful document description language. The LP1200's unique internal FLASH ROM, which holds the printer controller firmware, can easily be

updated as new developments in technology occur. This protects the

investment you make in buying a Ricoh LP1200. Other manufacturers

would require you to buy a new printer! Internal FLASH ROM and

industry standard FLASH ROM PCMCIA cards can also be used to

permanently store fonts, macros, graphics and extra emulations. Again,

unlike the competition, the LP1200 includes LAYOUT, a powerful and

lefore you decide when to buy our new laser printer, we uggest you think very carefully about WHERE you buy it. Consider what it will be like a few

months after you have made your purchase, when you may require additional peripherals or consumables, or help and advice. And, will the company you buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. With our unrivalled experience and expertise, we can meet customers' requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service".

- FREE OVERNIGHT DELIVERY: On all hardware orders shipped in the UK mainland.
- TECHNICAL SUPPORT HELPLINE:
- A team of technical experts will be at your service. PRICE MATCH:
- We match competitors on a "Same product Same price" basis. ESTABLISHED 15 YEARS:
- We have a proven track record in professional computer sales. PART OF A \$50M COMPANY (with over 200 stair); We are solid, reliable and profitable.
- BUSINESS + EDUCATION + GOVERNMENT: Volume discounts are available. Tel: 081-308 0888.

OFFER YOU SHOWROOMS:

verage Street Price (excl. VAT)

Windows 3 Driver 47 400 dpl

nint Speed

raight Paper Path

andard RAM

Varm Up Time

lash RDM

EXC VAT

£8.47

£12.50

£85.00

£85.00

£65.00

£89.00

£35.00

£199.00

£599.00

PCMCIA Card Slot

irst Page of Text Output

faximum resolution in dots per inch

CL 5 Printer Command Language

P-GL/2 Vector Graphics included

esolution Improvement/Enhancement

ili A4/300 dpi graphics with standard RAM.

ocument Description Language included

AGFA Intellifort Scaleable Font Technology

Able to print on 169gsm card (Manual Feed)

PC independent PLAIN PAPER FAX OPTION

"As guested by manufacturers - July '93

caleable Resident Fonts - in HP LJ III Emulation.

lash ROM Upgradeable Firmware

IP LaserJet III Emulation Included

BM ProPrinter Emulation Included

rotective cover on standard tray

Min-Max Paper Weight in gum

ble to print on OHP Film

Standby - Noise Level

rinting - Noise Level

PSON FX Emulation Included

Standard Tray Capacity

ost per copy"."

asident Bit-Mapped Fonts

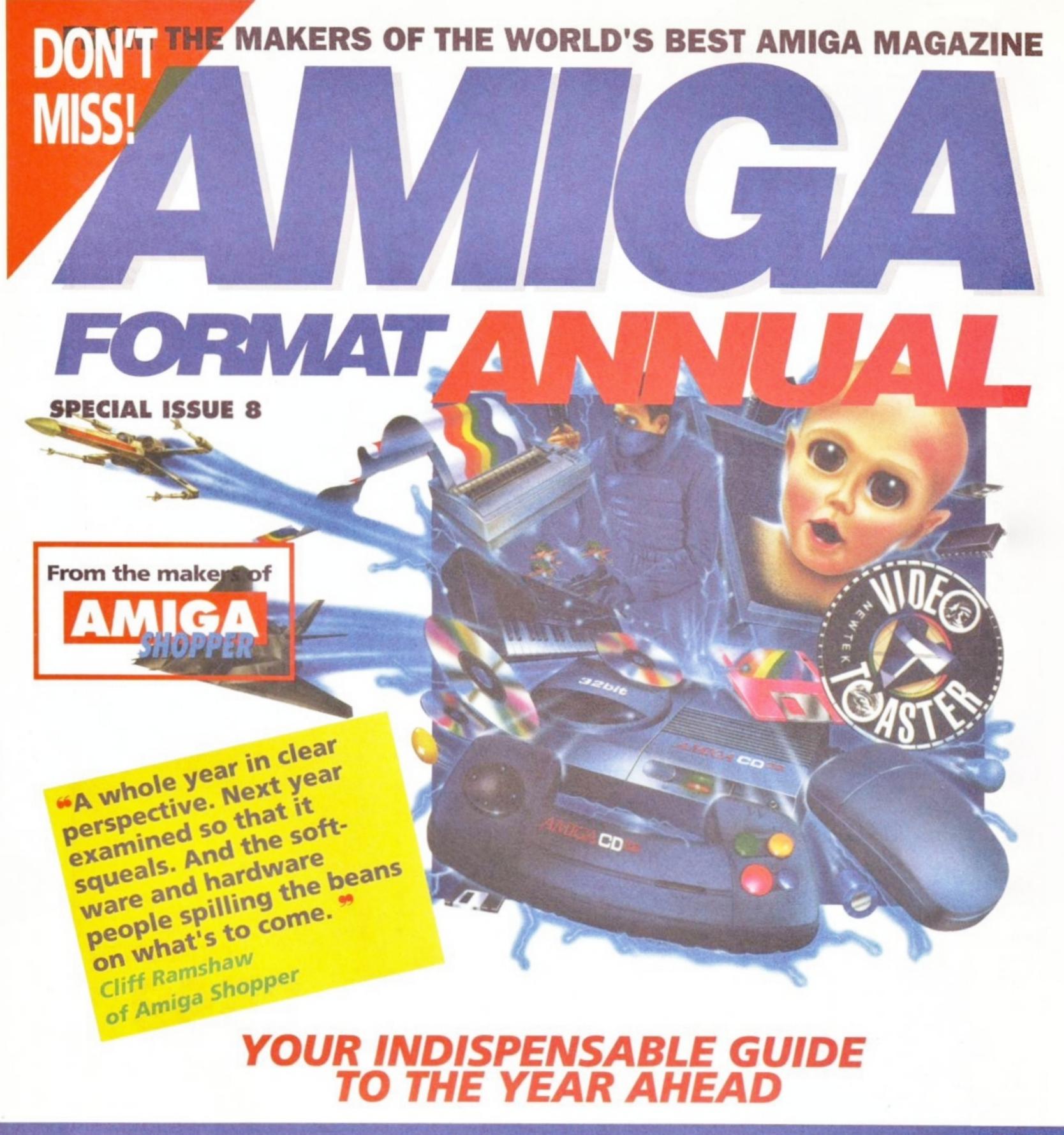
- We have demonstration and training facilities at all our stores.
- THE FULL STOCK RANGE: All of your requirements are available from one supplier.
- FREE CATALOGUES:
- Will be mailed to you with special offers and full details of hardware, peripherals and software.
- We accept most major credit cards, cash, cheque or monthly TETTIS IAPR 29.6% - written quotes on requesti.



MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening	Tel: 081-309 1111 Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Opening Hours: Mon-Sat 9:30am-6:00pm No Late Night Opening	Tel: 071-580 4000 Fax No: 071-323 4737
LONDON SHOP: Selfridges (Basement Arena), Oxford Street, London, W1A 1AB Opening Hours: Mon-Sat 9.30sm-7.00pm Late Night: Thursday - 8pm	Tel: 071-629 1234 Extension: 3914
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Opening Hours: Mon-Sat 9:00am-5:30pm Late Night: Friday - 7pm	Tel: 081-302 8811 Fax No: 081-309 0017
ESSEX SHOP: Keddies (2nd Floor), High Street, Southend-on-Sea, Essex, SS1 1LA Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 7pm	Tel: 0702 468039 Fax No: 0702 468039
IPSWICH SHOP: Debenhams (2nd Floor), Waterloo House, Westgate St, Ipswich, IP1 3EH Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 9pm	Tel: 0473 221313 Fax No: 0473 267762
To: Silica, AMSHP-0194-75, 1-4 The Mews, Hatherley Rd, Sidcup, Ke	ent DA14 4DX

PLEASE	SEND IN	IFORMAT	ION O	N RICOH	LP120	0
Mr/Mrs/Miss/Ms: . Company Name						
Address:						

Which computer(s), if any, do you own? E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information.



- Expert opinions on the year to come...
- e Exclusive news on the kit you'll be buying in '94
- 124 packed pages of essential Amiga analysis!

ON SALE... RIGHT NOW!

AMIGA 1200 PACKS CD32 CONSOLE



From December 1st 1993, when you buy your Amiga from Silica, at our advertised prices, we will give you one or more FREE GIFTS. The gifts include the new Chaos Pack, GFA Basic and Photon Paint II a total value of over £265. Check the panels on this ad to see which gifts come with each Amiga from Silica. CHAOS is the software pack of the year and is an Amiga Format Gold winner. It includes Chaos Engine, Nick Faldo's Championship Golf, Syndicate

and Pinball Fantasies. ALL FOUR titles have been rated over 90% and won the coveted AMIGA FORMAT GOLD AWARD!

CHAOS ENGINE SYNDICATE £34.99 PINBALL FANTASIES £29.99 NICK FALDO'S CHAMPIONSHIP GOLF £34.99

CHAOS PACK: £125.96 GFA BASIC V3.5 - Powerful Basic Programming Language ... £50.00 PHOTON PAINT II - Powerful Graphics Painting Package ... £89.95

TOTAL VALUE: £265.91









ON ALL CONFIGURATIONS

FREE DELIVERY PACK INCLUDES: * 140 AMIGA 600, ... BUILT-IN 1to DRIVE ... BUILT-IN TV MODULATOR. DELUXE PAINT III LEMMINGS FREE FROM SILICA (See Top Left) £125.96 TOTAL PACK VALUE: £431.93

LESS PACK SAVING: £242.93

SILICA PRICE: £189.00

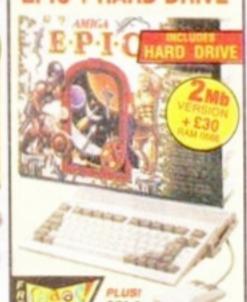


1 YEAR ON SITE/AT HOME WARRAN ON ALL CONFIGURATIONS FREE DELIVERY

PACK INCLUDES: 1_{Mb} AMIGA 600, BUILT-IN 1vs DRIVE & TV MODULATOR DELUXE PAINT III £79.99 MICROPROSE GRAND PRIX. £34.99 £25.99

PUSH OVER

FREE FROM SILICA (See Top Left) £125.96 TOTAL PACK VALUE: £492.91 LESS PACK SAVING: £293.91 SILICA PRICE: £199.00



YEAR ON SITE/AT HOME WAS ON ALL CONFIGURATIONS FREE DELIVERY

PACK INCLUDES: 1so AMIGA 600 ... BUILT-IN 1to DRIVE & TV MODULATOR 64m HARD DISK ... £179.00 ■ EPIC - A SCI-FI ADVENTURE £29.99 ROME - ROLE PLAYING ADVENTURE £25.99 MYTH - STOP THE SPREAD OF EVIL. £19.99 £25.99 TRIVIAL PURSUIT - POPULAR QUIZ REE FROM SILICA (See Top Left) £265.91

PACK VALUE: £750.86 PACK SAVING: £401.86 SILICA PRICE: £349.00

64 INC VAT - AMC 096 85

INC VAT - AMC 0985

AMIGA (C) D



OSCAR & DIGGERS CD TITLES

EMMINGS CD REE FROM SILIC FREE DELIVERY

TECHNICALLY SUPERIOR

AMIGA	, SE	BA
	CDn	MEGA CD
CENTRAL PROCESSOR	68020£0	68000
Power	32-811	16-ait
SPEED	14ми:	12.5wn
STANCARD RAM	2048K	128K
COLOUR PALETTE	16.8 WLLOV	512
MAX COLOURS ON-SCREEN	256,000	64
FULL-SCREEN VIDEO CD	OPTIONAL	No
DUAL-SPEED CD DRIVE	YES	No
4 VOICE STERED SOUND	Yes	Yes
MULTI-SESSION	YES	No
S-VHS Output	Yes	No
MAXIMUM RESOLUTION	840 x 640	300 x 200
CD TITLES FROM	£19.95	£39,99
PRICE	£289	£379 ii

'The Mega CD (£269) will only work when plugged into the COMPATIBLE WITH 26 CDTV TITLES Mega Drive (£129), therefore the price shown is the total combined price of both models. The Amiga CD32, however, is a standalone system which works without additional units.

32-BIT POWER

The world's first CD-ROM console to use 32-bit technology, 4 x faster than a 68000 CPU CD QUALITY STEREO SOUND 16.8 MILLION COLOUR PALETTE

 256K MAX COLOURS ON-SCREEN ■ GAMES FROM BELOW £20 PLUGS INTO A TV OR MONITOR

PLAYS MUSIC CDs DUAL SPEED Transfers data almost twice as fast as

ordinary CD-ROM drives MULTI-SESSION

Recognises ALL data on CDs, even if the information was added after initial pressing FULL SCREEN VIDEO-CD 11/93 Via an optional extra module which allows you to watch films on the CD32 - compatible

with the latest Video-CD standard, endorsed by JVC, Matsushita, Philips and Sony 2ve RAM

11 BUTTON CONTROL PAD

2 FREE CD TITLES . OSCAR . DIGGERS PLUS FREE FROM SILICA LEMMINGS CD WORTH £9.99

OVER 45 TITLES EXPECTED BEFORE CHRISTMAS '90

Amiga **CD32** + 3 FREE CD TITLES

+ HARD DRIVE **OPTIONS** DESKTOP DYNAMITE



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

PACK INCLUDES 2se Amiga 1200
 Nigel Mansell's Trolls AGA World Championship AGA + FREE FROM BILICA (See Top Left)

RACE 'N' CHASE

GFA BASIC

1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY PACK INCLUDE:

 2sto Amiga 1290
 Deluxe Paint IV AGA Wordworth V2. Dennis · Wordworth Print Manager + FREE FROM SILICA (See Top Left) DESKTOP DYNAMITE

AMIGA 1200 SPECIFICATIONS # 2% Internal IDE Hard Drive Options

- 68020EC Processor 14.19vev Clock Speed
- 32-bit Architecture/2vs Chip RAM
- Amiga BOS v3.0/Built-in TV Modulator AA Chip Set/16.8 Million Colours
- PCMCIA Smart Card Slot. . 95 Key Keyboard with Numeric Keypad
- . 1 x 32-Bit CPU/RAM Expansion Slot

HARD DRIVE OPTIONS Approved 2.5" Hard Drives.

invalidate warranty

Covered by Commodore's Official 1 Year Dn-Site Warranty

1 Year On-site Warranty

Fitted correctly below metal safety shield - does not

Look for Special 'Official Upgrade' sticker



GFA & PHOTON

FREE DELIVERY YEAR RETURN TO SILICA WARRANTY PACK INCLUDES: 1 to AMIGA 1500 . £699.992 x 3½ BUILT-IN 1to FLOPPY DRIVES EXPANSION SLOTS PC COMPATIBILITY VIDEO SLOT For infranced graphics.

 PC-XT BRIDGEBOARD SUPPLIED ... £100.00 PLATINUM WORKS SOFTWARE £169.95 PUZZNIC £24.99 TOKI. £24.99 ELF £24.99 HOME ACCOUNTS 229.99 DELUXE PAINT III £79.99 FREE FROM SILICA (See Top Left) £265.91

> TOTAL PACK VALUE: £1420.80 LESS PACK SAVING: £1021.80 SILICA PRICE: £399.00 RRP ISOUTT 2200

1.42 A4000-030 A4000-040 The A4000 runs at up to 21 times the speed of the A600. GRAPHICS: 16.7 MILLION COLOURS RESOLUTIONS UP TO 1280x512 and 800x600 OPEN ARCHITECTURE: The A4000 has been designed for maximum lexibility providing plenty of room to nemory & peripheral expansion.

MONITORI OFTIONAL EXTRA

MIPS RATING

3xPC-AT SLOTS

YEAR ON SITE/AT HOME WARRANT

ON ALL CONFIGURATIONS

FREE DELIVERY

Million Instructions Per Second

18.7

 4x16/32-8iT ZORRO III SŁOTS 1x24-bit VIDEO SLOT.

The Amiga 4000 '030' and '040' are available in several RAM/Hard Drive options from Silica (please see below). All are fully configured and approved and carry Commodore's full one year on-site warranty. RAM upgrades are also available

from Silica. Due to current fluctuations in the market, please call for upgrade prices. 25мнг 68030.

80

25мнг 68040

RAM UPGRADES



A570 UPGRADE

FREE FROM SILICA:

Hutchinsons Encyclopedia CD RRP £29.99 A fascinating and unique reference tool comprising the complete Hutchinsons

Encyclopedia. CDPD - 600 Public Domain Titles RRP £19.99 Over 600Ms of Public Domain software and shareware. Includes word processors, data bases and spreadsheets etc., games and utilities.

WORTH OVER £49 This Compact Disc-playing add-on simply clips to the side expansion port of your Amiga 500 and is immediately ready to deliver its power.

Enables your Amiga 500 to run CDTV software.

Plays normal audio CD discs

Storage capacity equal to 600 floppy disks Transfer time 153Kb/second

 Compatible with CD + G and CD + MtDI formats. Compatible with ISO9660 standard

 Some old A500s need modification - ast to seals. WINNER OF THE AMIGA GOLD AWARD 91%

NEW LOW PRICE CBTV



As the mayor of Sim City you take control of the police, fire and fram departments. You must challenge crime, survive dreadful weather and

aircraft disasters. Ref CSS 4921 **£9.99** (NC



PACK This ultra high action compilation is sure to raise your adrenaling level. Includes Jailbreak Byteman, Deathbolt and

puzzles to ensure the

survive to tell their descendants the tale.

FOR OUR COMPLETE RANGE OF COTY TITLES PLEASE CALL OUR MAIL ORDER HOTLINE OR VISIT ONE OF OUR SHOWROOMS LISTED BELOW

Silica are a fully authorised Amiga dealer. We can upgrade Amiga 600 or 1200's with hard drives, for new or existing owners, without affecting Commodore's official on site warranty. We offer other upgrades and repair service for A500 and A500 your computers.

UPGRADES & REPAIRS

Latest test equipment 20 trained technicians 1,000s of parts in stock FAST, 48 hour service

FREE return courier All work guaranteed

We can collect (£5+VAT)

POWER: CALL FOR PRICES CALL FOR A PRICE LIST 1.76we 31/ FLOPPY DRIVE

FARS you may require additional peripherals or

SILICA - THE AMIGA SPECIALISTS Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when

software, or help and advice. And, will the company you buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. With our unrivalled experience and expertise, we can meet our customers' requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE

literature and begin to experience the "Silica Service". COMMODORE APPROVED UPGRADES: Official Hard Drive upgrades with ICL on-site warranty.

• FREE OVERNIGHT DELIVERY: On all hardware orders shipped in the UK mainland. TECHNICAL SUPPORT HELPLINE:

PRICE MATCH: We match competitors on a "Same product - Same price" basis. • ESTABLISHED 15 YEARS:

A team of Amiga technical experts will be at your service.

We have a proven track record in professional computer sales. PART OF A \$50M A YEAR COMPANY: With over 200 staff - We are solid, reliable and profitable.

BUSINESS + EDUCATION + GOVERNMENT: Volume discounts are available. Tel: 081-308 0888.

SHOWROOMS

We have demonstration and training facilities at all our stores.

• THE FULL STOCK RANGE

All of your Amiga requirements are available from one supplier. • FREE CATALOGUES Will be mailed to you, with special reduced price Amiga offers, as

well as details on all Amiga software and peripherals. PAYMENT: We accept most major credit cards, cash, cheque or monthly terms (APR 29.8% - written quotes on request).



HOT 081-309 1111



	E AMIGA COLOUR CATALOGUE
	Surname:
	Sumarie.
Address:	
	*
	Postcode:
	Tel (Work):
Which computer(s), if any, do you own?	·

Which	computer(s),	if	any,	do	you	own?	
	E&OE - Adver	rtise	ed prices	s and	specific	cations n	may change - Please return the coupon for the latest info

CRAZY CHRISTMAS OFFERS FROM BCS

DISKS! DISKS! DISKS!

100% CERTIFIED ERROR FREE PLUS FREE DISK LABELS

50	3.5"	DS/DD	£21.99
100	3.5"	DS/DD	£35.99
150			£55.99
200	3.5"	DS/DD	£66.99
300	3.5"	DS/DD	£99.99
400	3.5"	DS/DD	£132.99
500	3.5"	DS/DD	£159.99

All prices include VAT/free labels REMEMBER, THESE PRICES INCLUDE FREE DELIVERY

DISKS + 100 CAP BOXES

100% CERTIFIED ERROR FREE PLUS FREE DISK LABELS

50	3.5" DS/DD + 100 cap box	£25.99
100	3.5" DS/DD + 100 cap box	£39.99
150	3.5" DS/DD + 100 cap box	£58.99
200	3.5" DS/DD + 2 x 100 cap boxes	£75.99
300	3.5" DS/DD + 3 x 100 cap boxes	£110.99
400	3.5" DS/DD + 4 x 100 cap boxes	£147.99
500	3.5" DS/DD + 5 x 100 cap boxes	£179.99

All prices include VAT/free labels

REMEMBER, THESE PRICES INCLUDE FREE DELIVERY

DISKS + 80 CAP BANX BOXES

100% CERTIFIED ERROR FREE PLUS FREE LABELS

ı	50	3.5" DS/DD + 80 Cap Banx Box£32.99
١	100	3.5" DS/DD + 80 Cap Banx Box£45.99
ı	150	3.5" DS/DD + 2 x 80 Cap Banx Boxes£74.99
	200	3.5" DS/DD + 2 x 80 Cap Banx Boxes£89.99
ı	300	3.5" DS/DD + 4 x 80 Cap Banx Boxes£110.99
	400	3.5" DS/DD + 5 x 80 Cap Banx Boxes£145.49
	500	3.5" DS/DD + 6 x 80 Cap Banx Boxes£235.99

All prices include VAT/free labels

REMEMBER, THESE PRICES INCLUDE FREE DELIVERY

* PACK 1 *

NEW Amiga CD32 Oscar & Diggers ONLY £278.99

* PACK 4 *

NEW A1200 Desktop Dynamite Pack + 85Mb Hard Drive Microswitch Joystick & Dust Cover **ONLY £515.99**

COMMODORE 1084S COLOUR MONITOR + LEAD + DUST COVER £179.99

PANASONIC 2123 COLOUR PRINTER + WORDWORTH S/W £215.99

PRINTER RIBBONS

PRINTER	BLAC	COLOUR	
	BRANDED	COMP	BRANDED
Citizen 120D	£3.40	£2.70	N/A
Citizen Swift 9	£3.40	£2.70	£15.30
Citizen Swift 24/24E/224	£4.70	£2.70	£15.30
Panasonic 1124	£8.50	£3.58	N/A
Star LC-10	£4.47	£3.06	£6.70
Star LC-20	£4.47	£3.06	N/A
Star LC200	£6.11	£4.70	£12.30
Star LC24 10/15	£5.58	£3.53	N/A
Star LC24-200	£5.58	£3.53	£13.25

Call for prices on any ribbon ADD £1.50 P+P

DUST COVERS

A500	£3.50
A600	£3.50
STAR LC200	
STAR LC-24 200	£3.50
CITIZEN 9	£3.50
CITIZEN 24	£3.50
PHILIPS MKI/II	£3.50
ATARI	£3.50
ADD £1.50	D P+P

* PACK 2 *

NEW A1200 Desktop Dynamite Pack. Includes A1200, Deluxe Paint IV AGA, Dennis, Wordworth AGA, Oscar, Digita Print Manager+ FREE Microswitch Joystick and Dust Cover

£325.99

NEW! NEW! NEW!

A1200 4Mb Blizzard Board £179.95 Blizzard 1230 Turbo Board £244.95 68030 40 Mhz 4Mb RAM for 1230 Turbo £179.95

A1200 EXTERNAL HARD DRIVES

OVERDRIVE 130Mb HD £239.99 OVERDRIVE 170Mb HD £284.99

MICROVITEC 14"

Colour Multisync monitor. **ONLY £399.99**

WORD PROCESSING SOFTWARE

PENPAL £29.95 FINAL COPY II £57.95 **NEW FINAL WRITER £94.95**

INKIET CARTRIDGES & REFILLS

HP Deskjet Black Ink Cartridge	£17.50
HP Deskjet Black Dual Capacity Ink Cartridge	£27.47
HP Deskjet 500C Colour Ink Cartridge	£29.37
Canon BJ10e/ex Black Ink Cartridge	£16.99
Black Twin Refill Kit	£14.98
Colour Twin Refill Kit (3 cols)	£29.85
500C Colour Refill Kit	£14.98
Amiga Colour Separation Software	£39.95
Canon BJ00 Cart (BJ02)	£19.99
ADD £1.50 P+P	

HIGH DENSITY 3.5" DISKS 60p each, 100 for £61

inc labels and postage

* PACK 3 *

NEW A1200 BCS PACK Includes A1200 + Nigel Mansells Grand Prix AGA + Trolls AGA + FREE Microswitch and Dust Cover

£279.99

BCS EXTRAS PACK

Includes Microswitched joystick, dust cover, mouse mat, 10 3.5" DS/DD Disks, Disk Box, Cleaning Kit.

ONLY £20.00

Available only when purchasing Amiga machines

LIMITED OFFER

Nigel Mansell's Grand Prix AGA version + Trolls AGA version

ONLY £24.99 (INCL P+P)

ACCESSORIES/JOYSTICKS

1000 Coloured Labels	£8.00
1000 Tractor Labels (White)	£10.00
Mouse Mat	£2.75
Mouse Holder	£2.50
14" Monitor Stand	£10.00
Printer Stand	£6.00
3.5" Cleaning Kit	£2.75
Printer Ribbons	
Parallel Lead	83.00
Zipstick	
QS Python IIIM	£9.50
Amiga Mouse	
Joystick Extension Lead	

DISK BOXES

3.5*	10 Cap	£1.00
3.5*	40 Cap	
3.5°	100 Cap	£4.50
3.5"	150 Cap Posso Box	£16.50
3.5"	80 Cap Banx Box	
5.25°	10 Cap Box	£1.10
5.25*	50 Cap Box	
5.25°	100 Cap Box	£5.90
5.25*	70 Cap Posso Box	£16.50

INKJET PRINTERS

Canon BJ10 SX	£219.99
Canon BJ200 Mono	£329.95
Canon BJ230 Mono	£374.99
Canon BJC 600	£575.99
HP 510 Mono	£284.95
HP 550 Colour	£539.99

Established now for over 4 years BCS has thousands of satisfied customers throughout the UK. Come and see our new showroom in Brighton. We also stock Amiga, Atari, PC, Sega & Nintendo hardware and software. We also operate a Sega game rental scheme. Don't delay, Call BCS today

> ORDER HOTLINE: Tel:0273 506269 Fax:0273 551477 Send cheques / postal orders to:

BCS Ltd., 295 Ditchling Road, Brighton, East Sussex BN1 6JH Add £4 p&p unless stated. Add £10 next day. All prices include VAT.



Creditcharge

All offers subject to availability. E&OE. Cheques will be held for clearance. Licensed credit brokers for Lombard Tricity Finance Ltd. SHOP PRICES AND PACKS MAY VARY



Find your local

This month: Scotland, Wales, special interest groups.

SCOTLAND

Amiga Helpline Software/hardware help service, free access to PD, DTP fonts and clip-art, plus general chit-chat. Send stamp for details. Contact Gordon Keenan, Amiga Helpline, 6 Skirsa Square, Glasgow G23. Membership £20 per year. (AS37)

Angus Amiga CDTV club Contact J Robertson, 22a High St, Brechin, Angus DD9 6ER # 0356 623072. Review software, discuss anything Amiga, Free membership, (AS37)

Dunfermline Sound & Vision Club Video, cine, slides, graphics, titling & clip art using Amiga. Meet Viewfield Terrace, Dunfermline, 7.30 pm alternate Wednesdays. Contact Stan Reed, 7 Maxton Place, Rosyth, Dunfermline, Fife KY11 2DG. £1 per meeting inc. tea. (AS38)

Edinburgh Amiga Club Advice, talks, PD exchange, monthly meetings, Contact Stephen Fradley, 114 Duke Street, Edinburgh EH6 8HR, **☎** 031 555 1142. (AS38)

Edinburgh Amiga Group Membership £5, inc free advice and PD. SAE to Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE. (AS37)

Lothian Amiga Users Group Amiga contacts, group buying of disks, demo evenings, shareware swaps, advice Meet Room 71, Inveralmond Community High School, Ladywell, Livingston, 6.30-9.30pm third Monday every month. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR. £1 a meeting. (AS38)

Perth and District Amateur Computer Society General advice, talks, Amiga PD. Meetings third Tuesday in every month, 8pm. Membership £6 or free for under 16s. Contact Alastair MacPherson 137 Glasgow Rd, Perth. (AS37)

Redburn Computer Users Group Help, ideas, PC, graphics and business. Meets every second Wednesday 6.30pm to 9.30pm, Contact Ruby Anderson # 0294 313624. (AS37)

Tay-Soft PD Club Non-profit-making postal PD, advice, disk newsletter, helpline 6-10.30pm. Contact Dave Thornton, 46 Balmerino Road, Dundee DD4 8RR # 0382 505437. Membership £2.50 (free Utils disk on joining). (AS37)

WALES

Amiga Maniacs Help Graphics, sound, WB, programming, help. Beginners welcome. Free membership (by post). Contact Johnny, 8 Tan-y-Grais, Caernarfon Rd, Bangor LL57 4SD. (AS35)

Amiga Navigation Contact Dave Thomas 4a, Allister St. Neath, W Glamorgan. PD, advice, even small repairs and social evenings. Weds 7-9pm. Membership £10 per year. (AS35)

Bloomfield Video and Computing Beginners, video techniques. Meetings at Bloomfield Community Centre, Narberth, 7.30pm alternate Tuesdays. Membership £5. Contact Mrs Beryl Hughes, Nashville, 50 Glynderi, Carmarthen, Dyfed SA31 2EX # 0267 237522. (AS35)

Blue Bedlam Free disk-based magazine with variety, news, views, games, etc. Contact Michael Grant, 48 Gills Avenue, Cwrt-y-gollen, Crickhowell, Powys, Wales NP8 1TG. # 0873 811791. (AS38)

ShieldSoft PD, CLI help, AMOS help, newcomers welcome. 26 Doren Avenue, Rhyl, Clwyd LL18 4LE, # 0745 134 3044. Membership free. (AS35)

Solo (Amiga) BASIC and AMOS help, CLI and PD. Contact Mike, 26 Doren Avenue, Rhyl, Clwyd LU8 4LE. # 0745 343044 Mon-Fri 10am-7pm. (AS38)

South Wales Club Newsletter, PD library, free newsletter, programs, help and advice. For more info contact D Allen 53 West Avenue, Trecenydd, Caerphilly CF8 2SF. (AS35)

Wrexham District Computer Club PD, library, equipment loan. 10p to join, 50p to get in. Meetings at the Memorial Hall, Wrexham every Thursday, 7-10pm. Contact Paul Evans, 3 Ffordd Elfed, Rhosnesi, Wrexham, Clwyd LL12 7LU. (AS35)

SPECIAL INTERESTS, BBSs

1520 Plotter Group (ICPUG) John Bentley # 06286 65932. (AS35)

24-bit Club For users of Video Toaster, Opal-Vision, DCTV and AGA machines, Imagine 2, Lightwave and other 3D modelling software. Contact Gordon Keenan, 24-bit Club, 6 Skirsa Square, Floor 1, Glasgow G23. Send stamp for details. Membership £20 a year. (AS35)

Action Replay Users Club For help, tips, lists of

pokes. Free. For more details contact Gordon Hagan, 66 Muirside Avenue, Kirkintilloch, Glasgow G66 3PR. (AS35)

Amiga Boatowners All things nautical, WHY exchange, nautical aid programs etc. Free membership, send SAE to D Beet for details. Lock, Branston Fen, Lincolnshire LN3 5UN. (AS35)

Amiga E Support Group Supports all aspects of programming for this excellent new language. Contact John Findlay, 52 Church Road, Braunston, Nr Daventry, Northants. NN11 7HQ, # 0788 891197. Membership free; SAE for details.

Amiga Musicians Club Membership gets you a disk with 50 IFF samples a month for 12 months. Also sample service. Membership £30. Contact Gavin Wylie, Guthrie Street, Carnoustie, Angus. (AS35)

Amiga Video Producers' Group Disk magazine five times a year; meets quarterly in Swindon. Object library for mainstream Amiga 3D programs (Imagine, Sculpt, VideoScape, etc). For info SAE to J Strutton, 8 Rochford Cl, Grange Park, Swindon, Wilts SN5 6AB # 0793 870667 before 9pm. Membership fee £10 a year. (AS35)

AMOS Programmer Club Free membership, swap AMOS programs and PD, disk magazine and help for new users. Contact Gareth Downes-Powell, 6 Brassey Avenue, Broadstairs, Kent CT10 2DS.

AMOS Programmers Exchange Free membership. Swapping software and ideas. Help available. J Lanng, 7 Majestic Rd, Hatch Warren, Basingstoke, Hants RG22 4XD. (AS35)

AMOS Programmers Group John Mullen at 62 Lonssdale St., Workington, Cumbria CA14 2YD. Hints, tips, tutorials too. SAE for info. £10 membership for bi-monthly disk mag. (AS35)

Atlantic Wave BBS 100s of files for download. DTP, clip art, graphics, utilities. First 200 members get unlimited downloads for life. Free membership. Message areas ranging from sport to cookery. All Amiga BBS. Call 0462 481745 (300 2400 baud 8N1) 24 hours a day. (AS35)

BASIC Programmers' Group 68 Queen Elizabeth Dr. Normanton, West Yorks WF6 1JF. Encourages the use of BASIC, exchanges ideas and assists beginners to the language. Free newsletter Mark Blackall # 0924 892106. (AS35)

Bible Bureau Online scripture output and informal bible study. Quarterly meetings, membership £5 quarterly. Contact AD, 24 Brodie House, 10 Harcourt Avenue, Wallington, Surrey SM6 8AR # 081 669 7485. (AS35)

Bright Lights BBS Amiga-only BBS, 300 - 14,400 BAUD, 350+ files on-line, On-line 7pm-7am every day. Sysop: Alan Clarke. # 021 325 1723 (modem), (AS35)

The CDTV Revolution Discussing and updating the ever-changing CD scene. Contact Lee Beckett. 4 Albert Road, Grappenhall, Warrington, Cheshire WA4 2PG, # 0925 268819. Membership £5 a year. (AS35)

CDTV User Group Newsletter, reviews, advice, helpline, CD swaps. Membership fee £4.99. Contact Gary Ogden, 50 Averill Road, Highfields, Stafford ST17 9XX # 0785 227059. (AS35)

CDTV Users Club Technical support, news, compiling compatible software list. Free membership - just send SAE. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES. (AS35)

Den's Den Mini BBS Small but nice BBS, very new & needs uploads. 7 days a week 10pm-7am. Free, no download limits. Dennis Luckett, 39 Seaforth Grove, Southend on Sea, Essex SS2 4EW. # 0702 464818. (AS38)

Digital Music Club First year membership gets you 2 disks a month every month for a year, plus sampling help. Contact Roger Hunt, 10 Devonshire Road, 10 Devosnhire Road North, New Whittington, Chesterfield Derbys, S43 2BL. # 0246 454280. Membership £25 a year. (AS38)

Gamer-Link International pen-pal club for gamers. Free swap service, advice on tips and cheats. Life membership £5. Contact Stu, 28 Churchfield, Ware, Herts SG12 0EP. (AS35)

GFA Basic Forum Free advice on programming in GFA. Also tutorial disk for sale. Beginners and advanced users welcome. Contact J Findlay # 0788 891197 or send SAE to 52 Church Rd, Braunston, Nr Daventry Northants NN11 7HQ. Free membership. (AS35)

Highlander BBS Lots of files, two CD-ROMs about to go on-line. Free membership. Contact Alan

Walker, Mark Price # 0452 384702 & 0452 384557, 300-14,400 speeds, 24 hours. (AS35)

Impulse BBS Comms, files, games and chat. Contact James Norris # 081 698 8978, online 10pm till 6pm the next day. 14.4 HST. (AS35)

In Touch Amiga Penpals, contacts, PD, swaps £2.50 per year. For more information contact P Allen, 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ. (AS35)

Look Northwest BBS 1,000Mb of on-line storage and CD-ROM, on-line games and much more. Speeds up to 14400. @ 0282 698380 or 0282 619518. Membership free. (AS35)

Marksman (Trojan Phazer user group) Promotes use of the Trojan Phazer, swaps PD and own programs, disk magazine. Contact David Green, 67 Thicket Drive, Maltby, Rotherham, S Yorkshire S66 7LB. (AS35)

Micro Academy Art, design and art-based games on Amigas. Meet in Richmond area. Contact Don Pavey, 30 Wayside, Sheen, London SW14 7LN, # 081 878 1075. Membership free, except for cost of colour printing and materials used.(AS35)

MUG - MED Users Group Club for users of Octa-MED. Disk magazine, advice, news, competitions. Contact Richard Bannister, 6 Glevum Road, Stratton St Margaret, Swindon, Wilts SN3 4AF. Membership free, send SAE for details. (AS35)

Nickelodeon BBS All speeds up to V32BIS. Online 6pm-9am weekdays, 12pm-9am weekends. Large file areas, download on 1st call. # 051 709 8508 (Liverpool). (AS38)

Nothing But AMOS Help with AMOS, tutorials, monthly disk mag - £7 for 6 issues. Contact Neil Wright, 3A Riding Dene, Mickley Square, Stocksfield, Northumberland NE43 7DL. (AS35)

On-Line Network BBS # 081 539 6763 (London). (AS38)

Pascal Programmers Group Disk-based newsletter for HighSpeed Pascal users. Free membership, Contact Colin Yarnall, 93 Manchester Rd, Wilmslow, Cheshire SK9 2JQ. (AS35)

Phoenix Demo Coders, musicians, artists and designers making the best demos. Free membership. Contact Frank, 46 Hall Road, Chadwell Heath, Romford, Essex, RM6 4LJ # 081 597 4661. (AS35)

Ray Tracers Postal club to swap ideas, objects, pictures etc for all formats. Also disk mag and help. Membership 50p. Contact Neil Hallam, 12 Meesons Mead, Rochford, Essex SS4 1RN.

System One BBS 1000s of filers on-line, supporting all areas of files and message bases, including Fidonet. Open 24 hours a day, 7 days a week. All speeds up to 16.800K HST and 14.400K V.32BIS. # 0743 791501.

UK Subs The Hanger BBS, trading post for PD files, swapping. Free membership. Contact Diddy or Arklight # 0525 875518. (AS35)

Unique Styles Postal club for Amiga artists, programmers, musicians. Free membership. Contact Derek at 15 Montgomery Rd, Highbrooms, Tunbridge Wells, Kent # 0892 518319. (AS35)

Video Visuals Exclusively for video producers, PD library, genlocking, digitising, quarterly disk magazine. Membership £10 per year. Contact Chris Brown, 4 Lavender Close, Witham, Essex CM8 2YG. (AS35)

Independent Commodore Products Users Group Free PD software, regular journal, technical helplines and discounts. Contact the Membership Secretary, PO Box 1309, London N3 2UT # 081 346 0050 after 6pm, or your local branch: (AS38) Camberley ■ Fred Wellbelove 0252 871545. Meetings, lectures, advice.

Chelmsford T David Elliott 0245 460189 Coventry # Will Light 0203 413511 Dublin (CUGI) # Geoffrey Reeves 010 353 1 288 3863. Meetings, newsletter, discounts. Exeter # John Buckle 0392 214760 Lothian: Andy Ruddon, 65 Drum Brae Terrace, Edinburgh EH4 7SF. Meetings, workshops, dis-

Macclesfield

Peter Richardson 0298 23644 Mid Thames # Mike Hatt 0753 645728 (8-10pm)

Solent Anthony Dimmer 0705 254969 South East # John Bickerstaff 081 651 5436. Open nights, newsletter, discounts. South Wales # Mike Bailey 0446 775287 South West # Peter Miles 0297 60339 Stevenage # Brian Grainger 0438 727925 Stoke-on-Trent T David Rose 0782 815589 (eve) Watford

Bob Rigby 0923 264510 West Riding # Kevin Morton 0532 537318 Wigan Brian Caswell 0942 213402 1520 Plotter Group # John Bentley 06286 65932.

Note: this list is provided as a free service for amateur, non-profit-making user groups. Amiga Shopper does not endorse or recommend any particular group and cannot be held responsible for any losses or problems you might suffer.

WARNING: YOUR GROUP IS ABOUT TO BE DELETED

Your user group will be listed here free of charge for six months, then deleted to prevent defunct groups being listed indefinitely. The number at the end of each entry is the last issue in which that entry will be included. If you want your group's entry left in, just send in this coupon again a couple of issues in advance. PD libraries are now listed at the end of the PD section - this issue, page 120.

If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to Amiga Shopper User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS33
Group name
Type of activities
Place of meetings
Time of meetings
Contact name
Contact telephone number
Contact address
Membership fee
This is a new entry an updated entry

wners of X-Copy II, that most popular of backup programs, will welcome this updated and extended version, which boasts new features such as hard disk back-up and file management facilities, as well as a complete rewrite of all your favourite cloners.

There are six separate utilities on the disk, two dedicated to copying disks. The first, X-Copy Professional, does not require the supplied dongle for any of its functions. Four levels of copy are available:

- DOScopy is a straightforward fast. copier for AmigaDOS disks.
- DOScopy-Plus is similar but attempts to correct any errors it finds on the source disk as you copy.
- BAMcopy-Plus is a very fast copier, with the capacity to ignore



X-Copy includes four back-up programs. Cyclone is the heavy-duty copier with the most sophisticated, but unfortunately slowest, means of duplicating your data.

any tracks on the source disk which are empty. It also attempts error correction onto the cloned disk.

 Nibble is the slowest, but by far the most accurate, backing up the majority of protected disks, and it even has the brilliant capacity to copy disks from other computers such as Archimedes or Atari ST.

Within each of these four copying modes, there are additional tools for disk or system management:

- · Optimise reorganises disk data, enabling files to be loaded faster. Only operable with AmigaDOS disks, Optimise needs at least 1Mb of RAM. From experience I would advise using this only on back-up disks.
- Format and QFormat are both speedy formatting utilities, working in about 40 seconds. QFormat additionally removes the directory and name of the disk.
- · Erase will de-format a disk, rendering it suitable for copying onto. While the use of new, unformatted disks is always recommended, Erase should not give you any problems.
- · Install will write a bootblock onto a disk, and there are five options

Wilf Rees tests X-Copy & Tools, a suite of powerful data back-up and disk management utilities.

within it: you can make the disk bootable or not, FFS bootable or not, and run a virus-detection routine as well as install a boot-block.

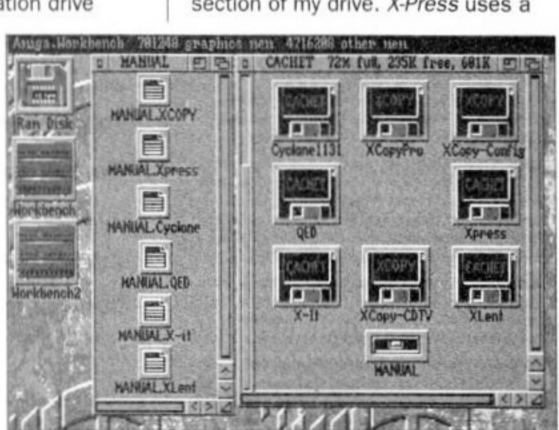
- . Speedchk looks at the speed of a disk drive. This is useful for comparing the comparative speeds of the source and destination drives when you want to do some copying the nearer together these are, the better, and ideally 300 rpm.
- · DrivesOn is a routine to make your Amiga think it has four disk drives.
- · KillSys is a memory optimiser, useful mainly to those whose Amigas have only 512K of RAM.
 - Directory will display the current directory of the disk, and Checkdisk, one of the most useful features, will analyse the disk for errors of various kinds, displaying a red error number which you can look up in the manual.
 - · Finally, Default resets all of the options to their default settings.

Any of the above options can be

selected using the illuminating gadgets on the control panel. When copying, you can select start and end tracks, and it is possible to integrate different copying modes into one single copy. Using the program is simplicity itself, but one word of caution: always write-protect your source disk. It is all too easy to wipe a disk, either by inserting the disks into the wrong drive or by not setting the source and destination drive indicators correctly.

BIG GUNS

Cyclone is the second copier in this suite of programs, and it is intended for those disks which X-Copy cannot handle. Unlike its junior brother, Cyclone requires the dongle supplied with the package. This is very well made compared to the previous version, which was simply a couple of



The impressive range of programs in the X-Copy & Tools suite, as shown when the window is opened. The manual directory describes its contents.

connectors joined by a few soldered pins. Five modes of copying are offered - three are standard modes. and two are high performance modes named "AWPM" (Adaptive Pulse Width Modulation) modes, which use the drive's pulse to lock the speed of sender and receiver together, the ideal conditions for duplicating. These are slow copiers, but the standard of achievement is excellent. Cyclone also hosts a Speedcheck and a Wipedisk facility. I have not found anything that Cyclone will not copy - it even backed up the sample disks for my Roland S550 sampler, notorious beasts to duplicate. Both X-Copy and Cyclone are first-class pieces of software, and they should enable you to back-up any data.

Aside from these, the tools in this suite vary in quality and usefulness. X-Lent is a file-handling tool similar to SID but not as good. All of the usual facilities are there copy, move, rename, delete, and so on – as well as 14 user-definable custom gadgets. I found X-Lent worked okay but I really wasn't happy with the graphic interface, probably because I am so accustomed to using Directory Opus.

X-Press is a hard-disk back-up utility similar to all the usual programs of that ilk (and not to be confused with Quark XPress, the professional DTP package on the Mac and PC). The expected commands are all there, as well as the ability to archive, flag and filter files. I must confess that I avoided backing up my entire hard disk frankly I am not that trusting - but the cluster of directories I did back up successfully restored to an empty section of my drive. X-Press uses a

"Tree Disk" at the completion of a back-up, to display all of the structure on the disk. This is the most important part of the back-up, because all commands to restore selected or filtered files are done from the key disk.

QED is a text editor, and really one of the stars of this suite. The rather stark appearance on loading belies its very powerful and friendly nature. All commands are called by key commands, using either <Ctrl> plus a key or <Alt> plus Function keys. Text manipulation approaches word processing standard.

QED also comes in handy to read the manual. Some people loathe disk-based manuals, others love them. I am of the latter persuasion. Producing glossy printed manuals is expensive and time-consuming - this way keeps the price down. The manuals for X-Copy & Tools are excellent - every conceivable aspect of each program is covered, and since you can select to print out only those aspects of the manual you want, you don't end up with useless reams of paper littering the room.

Considering the power and usefulness of this package, it is a must for anyone who needs to back up important data, and it offers a good range of data management utilities into the bargain. AS



X-Copy Professional & Tools

£39.99 From: Siren Software, Wilton House,

Bury Road, Radcliffe, Manchester M26 9UR. **☎** 061 724 7572

CHECKOUT X-CopyPro & Tools

Features

An amazing collection of programs to handle a multitude of back-up and

Documentation

management tasks.

Very comprehensive, though some people may not like the fact that it is disk-based, with only a few notes.

Ease of Use

A doddle really.

Value for Money

Incredibly cheap for guarding all of your precious data against accidental damage.

Overall rating

A must.

rom IL-Soft comes version 3 of their embroidery/sample designer, incorporating many of the characteristics usually found in art packages, with new added features.

The worksheet environment is essentially a piece of graph paper, with a collection of assorted icons underneath enabling the user to manipulate many possible features.

CHECKOUT X-STITCH DESIGNER

Features

Ease of use

All you need for the task, even an

invaluable IFF conversion facility.

A doddle for any age from 6 upwards.

Documentation

Simple but clearly written.

Value for Money

Not too pricey, but caters for only a limited market.

Overall rating

Does exactly what it says and does it pretty well.

The worksheet is larger than the Amiga screen, so a white square with an inset gadget gives an indication of which area of the design you are currently working in. You use the mouse for virtually all input of design, and you control the editing and disk activity from the keyboard. A colour choice panel displays 16 different selectable stitch colours, all of which can be adjusted using the familiar style of RGB slider bar to match particular yarns or cottons. You can also select stitch type using an icon-driven menu offering the most frequently-used stitches.

The package is really easy to use. The manual is only nine pages long, but explains in very easy to understand English how to use the software. Loading any of the five samples from disk (you just hit "L" for Load) and exploring ways of changing them is probably the easiest way to become familiar with the package. You can choose, for

000000000 SHOPPING LIST

X-Stitch Designer£34.99 From: IL-Soft, Buttercross House, 16 Langdale Gate, Witney, Oxfordshire **OX8 6EY** ☎ 0993 779274

X-Stitch Designer

example, a back-stitch type as any form of vertical, diagonal, horizontal or cross-stitch pattern, though this is only available in one colour.

Once you have created a basic pattern, you can exploit the powerful editing facilities. First it is possible to cut sections from other patterns and incorporate them into a current design: you call up the desired source file, draw a mouse-controlled box around the section to be captured, then use a simple find and

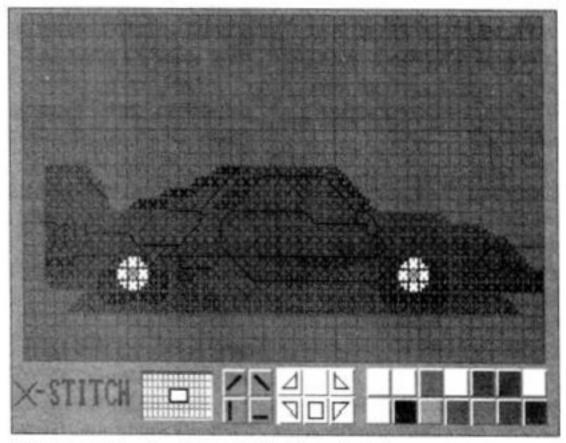
paste procedure to place the section into your existing design. You can also rearrange a design using "Block" functions to manipulate existing elements. The options available are Fill, Delete, Move, Copy, Turn, Mirror and Enlarge, each executed simply by hitting its first letter.

There is even the facility to import IFF files and convert them to X-Stitch format. Any 16-colour

image can be imported, giving you a tremendous opportunity to take advantage of all manner of external devices such as digitisers and scanners, making it easy to generate exciting pictures without the need for any great drawing ability.

This is a very well designed and exceptionally easy to use package which deserves a place in any school or home where textile work has a high priority.

Wilf Rees



An example of a Ferrari (that's what it says!), in the samples directory. Not the best of the offerings, but a really friendly interface and very easy-to-use control system make X-Stitch Designer a smart package.

Ithough the A1200 is without doubt the best value full 32-bitarchitecture computer on the market, its expandability is severely hampered by the fact that it has only one 150-pin 32-bit slot. This means you have to choose your upgrades carefully. But you'll rapidly

CHECKOUT TURBOTECH A41200

Features

Battery-backed-up clock, 32-bit, 70 nanosecond ZIPs - impressive.

Fitting

No problems - a tight squeeze, but easy to manage.

Documentation

Minimal but adequate.

Value for Money

Compares very favourably with 16-bit 4Mb expansions.

Overall rating

Cheap, cheerful, and may just fill your requirements.

outgrow the A1200's standard 2Mb of Chip RAM, so a memory expansion like this is a good option.

The Turbotech A41200 board boasts 4Mb of 32-bit "zero wait state" RAM and a real-time batterybacked-up clock. It is well-made, but worryingly, on the underside of the board, there is a kludge in the shape of a small string of copper wire. While this shouldn't be a problem once the board has been fitted, fitting is a bit of a squeeze and the slightest bit of mishandling during installation could break it.

As for the claims by Siren that the A41200 can more than double the speed of code execution over a standard Amiga, we've got to remain sceptical. You certainly wouldn't get that with a typical application. However, there is no doubting that loosing the CPU from the shackles of the co-processors will result in an

000000000 SHOPPING LIST

Turbotech A41200 memory expansion£169.99 From: Siren Software,

Wilton House, Bury Road, Radcliffe, Manchester M26 9UR **☎** 061 724 7572

overall speed increase. We checked exactly how much, using Amiga Intuition-Based Benchmarks v5.0.

Assuming a figure of 1 in each of the following categories for a standard A1200, these are the figures with the expansion.

- Integer: 1.19
- · Graphics: 1.16
- Floating Point: 1.33

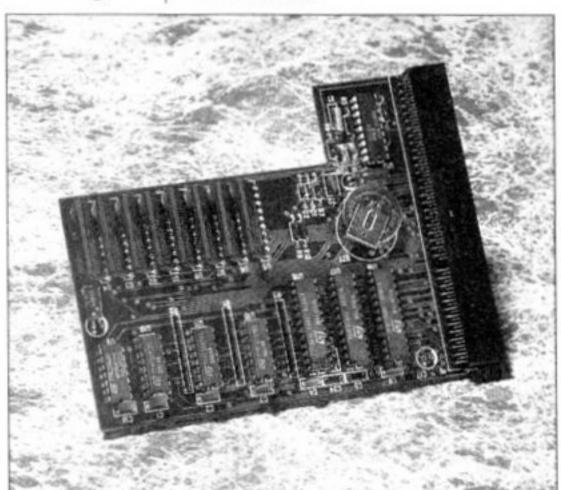
As can be seen from the results, the A41200 certainly increases the overall efficiency of program execution. However, it definitely does not double the speed. The average

figure we derived from the above table somewhat coincidentally tallied with the the Installation Manual and User Guide's speed increase statement of 122%.

The A41200 is a commendable piece of hardware. When you consider the special introductory price of £169.99 (only £10 more than a typical 16-bit 4Mb memory expansion), it's a steal. Expanded A1200s

leave you a relatively unconstrained hand to explore the sizzle the machine offers - multitasking, video applications, desktop publishing, raytracing, the lot.

The downside of the board is the fact that it is closed-ended. You can't add any more memory to it. Neither can you add an FPU, an accelerator or a SCSI interface. If all you need is 4Mb and a battery-backed clock, we have no qualms about recommending the unit. If not, you'll have to consider looking elsewhere. Steve McGill



The Turbotech A41200 memory expansion - fill your A1200's expansion slot with 4Mb of 32-bit RAM.

Reader Ads

...or your chance to reach 50,000 fellow Amiga owners for only a fiver.

FOR SALE

Memory for A500. Baseboard. 4Mb board with 3Mb on board and battery backed clock. Supports Kickstart 1.2/1.3 and compatible with Fat and Fatter Agnus. Instructions. £55. # 0403 217179

ICD Flicker Free Video 2. Fits Amiga 500(Plus), 1000, 1500, 2000. Boxed as new. £100 ONO. **a** 0570 423518 evenings.

A4000-030, 2+2, 170Mb hard disk, NEC Multisync monitor, Amos Pro + compiler, Blitz2 basic, DPaint4 AGA, Devpac3, £1,100, no offers. Buyer collects. **2** 0229 471881

Modem Miracom Courier V32 MST excellent condition as new. Under one year old. Offers around £200. □ Joe 0775 713079 after 6pm

2Mb A500Plus. ICD Flicker

fixer, 0.26 D/pitch Trinitron monitor. 105Mb H/disk. Dual floppy. Supra with 2Mb. Software on 200 disks, extras, £750. No offers, Free PSU with system. # Tony 0420 478668

Amiga 500, 2Mb RAM, extra disc drive, TV modulator. Workbench 1.3, some games, all manuals and software. £275. Bring offers. # 0993 776234

A500Plus, 2Mb, extra floppy £165. Dr T's KCS Level II 3.5 £125. Pro Page 2.1 £40. X-Copy Pro £18. Audio Master 4 £28. All boxed and original with manuals. □ Chris, Cheltenham 0242 678681

GVP A530 120Mb hard drive with 40MHz 68030 and 8Mb RAM. Boxed £700 ONO. I J Sircombe, 6 Manor Place, Priors Park, Tewkesbury, Glos. GL20 5HL.

Amiga B2000, WB 1.3. 40Mb hard disk, two 3.5-in floppy drives, 1Mb RAM. A

few games, word processor. 6pm. Ronald 0785 227756

GVP HD8+ 52Mb hard disk for A500 with 2Mb RAM. Boxed, as new, £250. Also C64 with software £75. **☎** 0933 623463

KCS PC Power Board inc. DOS 5.0 and manuals £120. # 0442 642280

Amiga Alternative Workbench "Workhouse". Easy for beginners. Excellent utilities for all areas of computing £4 inc postage. S Warner, 70 Rosedale Road. Truro, Cornwall, Allow 14 days.

A1500 WB2 68030 MMU FPU 6Mb RAM 100Mb hard disk, lots of software. Philips monitor £550. No offers. **☎** Howard 071 431 8030 after 7.30pm

A500 1Mb RAM £100. buyer collects or pays delivery. Comes in box. # 0697 476579 eves & weekends.

Amiga 3000HD one year old, 115Mb hard drive, 4Mb RAM, WB2, mouse, Trackerball, 8833 Mk II monitor, software, £900 OVNO. ➡ Allan 0992 630573

GVP 52Mb, for A500 or A500 Plus, with 4Mb RAM. Excellent working order, £275. Two 1Mb x 32 SIMMs taken from Amiga 4000, unused, £80 pair. # Darren 0689 856470

Amiga 4000/30, 80Mb HD, 6Mb RAM 6 months old, boxed, all manuals, £900. Possibly also Microvitor monitor 14-in multiscan. same age, £375. Serious software Vidi 12 digitiser mono powerscan by negotiation # Peter 0277 363351.

60Mb GVP hard drive, boxed and in excellent condition, hardly used £195 ONO. ■ Neil 0993 778596

A500 Plus, 2Mb Chip RAM, Rochard 80Mb hard drive. 4Mb Fast RAM, Power PC 880B external drive. All

Issue 33

boxed, £450 ONO. May split. # Dave 0344 424619 Bracknell.

A1200, 6Mb RAM, 84Mb HD, 68881 FPU with Cumana external floppy, MIDI interface, sampler, sound enhancer, Opus 4.03, c.30 games, c.200 disks of PD/shareware, excellent condition. Offers. # Sam 0224 770996

ADPro 2.3. Prize from Amiga Shopper I have recently bought! Unopened £100. Amazing bargain. # 0602 212967 after 5.30pm.

Amiga 600, 2Mb Chip RAM, some software, price £130. **1** 0865 248913

X-CAD Designer £40. DPaint 3 £15. Advantage S/Sheet £20. Top Form Designer £25. Flight Sim2 £10. Their Finest Hour and Mission disk £12. Perfect General £10. = 0622 747486

A500, WB 1.3, Checkmate case, 65Mb HD, 3Mb RAM. 200W PSU, £200. NEC m/sync monitor £185. Also stereo and 2nd drive, ICP FFV, £85. # Maidstone 0622 747486

Power Greyscale Scanner v3 £65. Apex disk copier £15. Robocop 3 £8, Premiere £6 (neither A1200 compatible). May swap all the above for A1200 1Mb 32-bit Trapdoor RAM. **☎** Barry 0661 872954

Amiga 1200, MBX 68881. 14MHz FPU plus real time clock. No RAM but will take from 1Meg to 8Meg SIMMs. £80 ONO, fits in Trapdoor. □ 061 366 0247, 9am till 5pm.

A1200, six weeks old, with Civilisation, Chaos Engine, Lethal Weapon, Robocop. 2 year extended guarantee. Genuine reason for sale. £280. # Ian, Windermere (05394) 42790 after 6pm most evenings.

WANTED

Anim. Prog. Moviesetter or Fantavision for Amiga. a or write to Kevin Shires, Lentersweg 67, Hamburg 22339, Germany, # 00 49 40 5382287

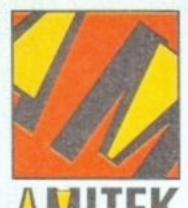
It's only £5 to sell your used hardware and software in Amiga Shopper

Sell your excess hardware and software with Amiga Shopper Reader Adverts. Just fill in the form and send it to us along with a cheque (made payable to Future Publishing) or postal order for £5. But BE WARNED. This magazine is not a forum for selling pirate software or other illegal goods. Software must include all issue disks, manuals and

a signed statement that all other copies have been destroyed. Please advise us if you are offered pirate or copied software by advertisers. All ads are accepted in good faith. The editor reserves the right to refuse or amend ads. We accept no responsibility for typographical errors or losses arising from the use of this service.

Trade ads will not be accepted, including anyone advertising the sale of PD software.

		Date	
Tick one box to show required section heading	Use one space for each	word. Only the words in this section will be print	Rotain with your
For sale			cheque to:
Wanted□			Amiga Shopper,
Personal 🗆			30 Monmouth Street,
Fanzines			Bath, Avon BA1 2BW
			ATON BAL 25W



Designed to bring you high performance at affordable prices AmiTek peripherals offer outstanding value-for-money. They are also designed and built to ensure easy fitting, and trouble free operation making them a pleasure to use. AmiTek products are also thoroughly tested and are very reliable. So reliable that they are pleased to offer a full two year warranty on the full AmiTek range.

AMITEK - 'FRIENDLY TECHNOLOGY'

FOR A500, A600 & A1200

I BATTERY BACKED CLOCK & SOCKET FOR FPU

RAM

OCKET FOR FPU



- High quality 3½" Sony mechanism Formats to 880K
 - Anti Click as standard
 - Switchable hardware anti-virus technology
 - On/off switch
 - Through connector for extra drives
 - Compatible with all Amigas
 - Robust metal casing and small footprint design
 - Power taken from Amiga no external PSU

1	he AmiTek this has many divartages, see or yourself	ANTI- CLICK	ANTI- VIRUS	STRONG METAL CASE	QUALITY SONY MECHANISM	ISOLATION SWITCH	2 YEAR WARRANTY
1	AMITEK	1	1	1	1	1	1
	ZAPPO	-	-	1	-	1	-
l	CUMANA	-	-	-	-	1	-



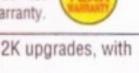




For sheer easy of use and flexibility you can't beat AMITEK's PCMCIA RAM upgrades. These compact credit card sized upgrades slot into the PCMCIA port on your A600 or A1200, increasing the RAM by 2Mb or 4Mb.

4Mb CARD INC VAT - RAM 6040





512K - NO CLOCK | 512K - WITH CLOCK

A500PLUS - The A500PLUS has a battery backed clock built-in so these 1 Mb RAM upgrades do not need this feature.

A600 - 1Mb RAM increase with battery backed clock.

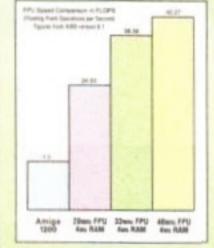
clock.

146 - WITH CLOCK

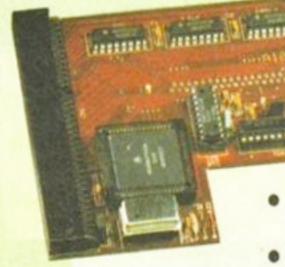
RAM UPGRADE THS ACCELERATOR

FOR THE AMIGA 1200

Maximise the processing power of your standard A1200. Be ready for a new software which makes more demands on Amiga memory and technology. The AmiTek Hawk RAM expansion includes up to 8mb fast 32 bit RAM, the ability to support a sophisticated 68882 FPU and a battery backed up clock. Built to a high standard, this board can be easily installed and comes with a 2 year warranty. The Hawk RAM board is available in 8 pre-configured factory installed versions enabling you to select the model which best suits your requirements.



1, 2, 4 or 8Mb



- 20MHz, 33MHz or 40MHz PLCC 68882 co-processor
- Comprehensive easy to follow manual with illustrations
- Works with all A1200 and A1200HD computers
- Does not invalidate your A1200 warranty

PRICES FROM ONLY



AMITEK FOR ALL AMIGA'S

No soldering required

Plugs straight into A1200 trap door -

Socketed SIMM for easy RAM upgrades

Three types of optional floating point unit

Upgradeable FAST RAM board to

Uses industry standard SIMMs

This modulator is recommended for users who wish to replace a faulty external modulator. Everything needed is supplied. Like all AmiTek peripherals it comes wih an easy to follow manual.

- High quality design
- Full manual included
- FREE RF cable supplied

HAWK RAM/ACCELERATOR OPTIONS

	NO FPU	20 MHz FPU	33 MHz FPU	40 MHz FPU
1 Mb RAM	£99	£149	-	-
2 Mb RAM	£129	-	£199	-
4 Mb RAM	£199	-	-	£299
8 Mb RAM	£399	-	-	£499

THE SILICA SERVICE

Before you decide when to buy your new Amiga products, we suggest you think very carefully about WHERE you buy them. Consider what it will be like a few months after you have made your purchase, when you may require additional peripherals or software, or help and advice. And, will the company you

buy from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. We can meet our customers" requirements with an understanding which is second to none. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service".

- FREE OVERNIGHT DELIVERY: On all hardware orders shipped in the UK mainland.
- TECHNICAL SUPPORT HELPLINE: A team of technical experts will be at your service.
- PRICE MATCH: We match competitors on a "Same product - Same price" basis.
- ESTABLISHED 15 YEARS: We have a proven track record in professional computer sales.
- PART OF A COMPANY: With over 200 staff We are solid, reliable and profitable.
- BUSINESS + EDUCATION → GOVERNMENT: olume discounts are available. Tet: 081-308 0888.

- We have demonstration and training facilities at all our stores.
- THE FULL STOCK RANGE: All of your requirements are available from one supplier.
- FREE CATALOGUES: Will be mailed to you, with special offers and full details of hardware, peripherals and software.
- We accept most major credit cards, cash, cheque or monthly terms (APR 29.8% - written quotes on request).



■ 1111 UNE 081-309 1111

MAIL ORDER: Order Lines Open: Mon-Sat	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX 9.00am-7.00pm (Sat 9.00am-5.30pm) No Late Night Opening	Tel: 081-309 1111 Fax No: 061-308 0608
CROYDON SHOP: Opening Hours: Mon-Sat	Debenhams (2nd Floor), 11-31 North End, Croydon, Surrey, CR9 1RQ	Tel: 081-688 4455 Fax No: 081-686 4658
LONDON SHOP: Opening Hours: Mon-Sat	9.30am-6.00pm 52 Tottenham Court Road, London, W1P 0BA No Late Night Opening	Tel: 071-580 4000 Fax No: 071-323 4737
LONDON SHOP: Opening Hours: Mon-Sat	Selfridges (Basement Arena), Oxford Street, London, W1A 1AB 9.30am-7.00pm Late Night: Thursday - 8pm	Tel: 071-629 1234 Extension: 3914
SIDCUP SHOP: Opening Hours: Mon-Sat	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX 9.00am-5.30pm Late Night: Friday - 7pm	Tel: 081-302 8811 Fax No: 081-309 0017
ESSEX SHOP: Opening Hours: Mon-Fri	Keddles (2nd Floor), High Street, Southend-on-Sea, Essex, SS1 1LA 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 7pm	Tel: 0702 468039 Fax No: 0702 468039
IPSWICH SHOP: Opening Hours: Mon-Fri	Debenhams (2nd Floor), Waterloo House, Westgate St, Ipswich, IP1 3EH 9.30am-5.30pm (Sat 9.00am-6.00pm) Lafe Night: Thursday - 9pm	Tel: 0473 287092

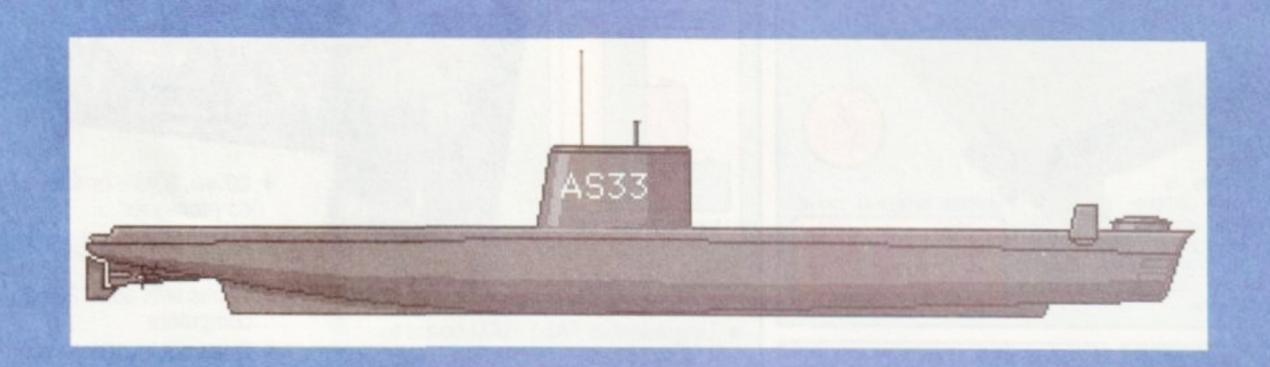
To: Silica, AMSHP-0194-125, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND A 64 PAGE A	MIGA COLOUR CATALOGUE
Mr/Mrs/Miss/Ms: Initials: Surna	ıme:
Company Name (if applicable):	
Address:	
	Postcode:
Tel (Home):	Tel (Work):

E&OE - Advertised prices and specifications may change - Please return the coupon for the latest information

Which computer(s), if any, do you own?

AMIGA SHOPPER SUB



YOU KNOW IT MAKES SERIOUS SENSE...

EIGHT GOOD REASONS WHY YOU SHOULD SUBSCRIBE TO AMIGA SHOPPER

- You make sure of your copy each and every month – guaranteed!
- Your copy is delivered direct to your door no more queuing at the newsagent's.
- You receive an exclusive subscribers' newsletter every month into the bargain, full of fascinating behind-the-scenes information, at no extra cost.
- 4. You are guaranteed no price increases for a full 12 months, even if the price goes up or VAT is imposed on periodicals.
- You pay no more for any higher-priced issues with special cover-mounted promotions.
- 6. If you use the handy direct debit form, you save a whopping £5 off the news-stand price.
- With direct debit, there are no more forms to fill in when your subscription runs out – we do all the work for you.
- And of course, you'll receive a speciallydesigned Amiga Shopper binder, worth £4.95, absolutely free.



High quality products. Full technical support.

ee before you bu t our showrooms.

of Hampshire Established 8 years

Amiga Workstation Expansion System

Monitor stand with shelf for drives etc. Strong metal construction made from 14SWG steel epoxy coated. No Cables or mouse are included.

Special price £27.50

All Citizen printers have a 2 year warranty

Citizen Printers

120D+ 9pin Mono	£115
Swift 90 9pin Mono	£145
Swift 90 9pin Colour	£159
Swift 200 24pin Mono	£195
Swift 200 24pin Colour	£209
Swift 240 24pin Mono	£235
Swift 240C 24pin Colour	£249

Citizen Projet Inkjet

Similar to Deskjet but Epson and Deskjet compatible

Special Offer

£219

Citizen's Print Manager

These advanced printer drivers transform colour printout's to laser type quality
Version 1 (224 & 24E) £5 Version 2 (Swift series 2) £10
Drivers 1/2 price if bought with a printer

Printer Drivers

Canon BJ-10e/ex Deskjet 500 Colour				£5
Doorgo	. 000	COIOGI		-10

Dust Covers

For Printers, Monitors, Computers most types in stock from £4.70

Canon BJC600

New Colour Printer

£599

360dpi Inkjet printer. Visit out showrooms compair Canon/Epson/HP/Star

Canon BJ-10ex

360dpi Inkjet printer £199 with cable & paper

BJ-10sx £199

360dpi Inkjet BJ10ex replacement

Canon BJ-200

Inkjet + Sheet Feeder with cable & paper

Panasonic KXP1123

Probably the best 24pin mono printer available. With cable & paper

Printers/Lasers

KXP4410 Laser 5ppm	519
KXP1170 9pin	134
KXP1124i 24pin	215
KXP2180 9pin Colour	169
KXP2123 24pin Colour	209
HP LaserJet 4L 4ppm	587
Epson EPL4000 6ppm	582
Epson LX400 9pin	119
Epson LQ570 + 24pin	265
Prices include VAT cable &	paper

* Mice

141100	• •
Golden Image Mouse	12.90
Genius Happy Mouse	
True Mouse	. 12.90

HP Deskjets

300dpi, mono or colour & mono. They produce laser quality print.

Deskjet Portable mono	£199
Deskjet 310 mono	
Colour kit for 310	
Deskjet 510 mono	
Deskjet 500C colour	
Deskjet 550C colour*	
*	

*550C has Colour & black cartridges resident at the same time. All Deskjet prices include 3 year

warranty, cable & paper

New HP Colour

Deskjet 310C

300dpi optional colour inkiet printer. £219 310 Mono 310C Colour £254

Sheet feeder for 60 sheets £54 Prices inc. warranty, cable & paper

Floppy Drives

Cumana CAX354

£52.90

1M external While stocks last

Roctec/Zappo New

All Amigas A500-A1200 £56.90 1M external drive

Printer Packs

All printers are supplied with a printer pack consisting of printer paper and a connection Free of charge

A stand is £5.00 extra (with a printer)

Ink Refills

BJ10 twin refill varoius colours 15.90 Deskjet twin refill various colours 15.90 (We stock 200 types of ribbons)

Auto Sheet Feeders

Canon BJ10 series	£52
Citizen Swift range	£79
Panasonic KXP range	£85

Stylus 800

Piezo Inkjet **Epson** Printer

360dpi escape P2 compat. £249

Star SJ-144

New Colour Printer

£499

360dpi thermal (suitable for transfers)

Star LC100

9pin colour with £149 cable & paper

with cable

~ ~~	
LC20 Mono 9pin	£123
LC200 Colour 9pin	£179
LC2420 Mono 24pin	£185
LC24100 Mono 24pin	£175
LC24200 Colour 24pin	£249
SJ48 360dpi Inkjet	£199
Auto Sheet Feeds from	£59

Kickstart/Upgrades

	_
Kickstart ROM only v2.04 4	1.50
Kickstart ROM only v1.3 29	9.00
Phoenix rom sharer 24	4.95
Keyb'd operated rom sharer 24	4.95
Fatter Angus custom chip 3	7.50

Special Prices

GVP Series 2

C V 1 OO110	JU 2
A500 Hard Disks	¥ £189
40Mb Hard Disk	£189
80Mb Hard Disk	£289
120Mb Hard Disk	£385
40Mb A530 Combo	£389
80Mb A530 Combo	£489
120Mb A530 Combo	£585

A1500 Hard Disks

40Mb Hard Disk	£189
80Mb Hard Disk	£289
120Mb Hard Disk	£385
Controller (no disk)	£119

GVP ram £55 per 1Mb GVP PC Emulator £95 286 16MHz Emulator for HD8 + /A530

Commodore Multiscan Monitors

14" Stereo Col. 1940 £269 Dot pitch .39

14" Stereo Col. 1942 £365 Dot pitch .28

Upgrades

A500 0.5-1 Mram + clock	£24.90
A500 0.5-1 Mram no cloc	
A500 + 1Mram + clock	
A600 CBM 1Mram no clo	
A600 CBM 1Mram + cloc	k £39.90
A1200 16MHz Acc. +FP	
A4000 32bit 4M Simm	
A4000 1M CHIP Ram exp	
A4000 0-128M Ram exp	£269.00

1084 Commodore

14" Stereo Colour Monitor. Q.42mm Pitch. Medium Res.

£165 £169 with cable without cable 1084ST with stand add £10

Philips CM8833 MK2

14" Stereo Colour Mon. 240V UK. 0.42mm. Medium Resolution

£190

£194 with cable

without cable Add £3 for Amiga / ST game

Accessories

2M Javestick/Mayor load 2 75
3M Joystick/Mouse lead 3.75
A500 Printer cable 7.95
Modulator/Disk Extension 10.95
23way Plug or socket 2.95
Computer Dust Cover 4.70
Type Through Covers 17.50
Mouse Mat (thick soft type) 4.95
Mouse House 2.95
1M internal 3.5" drive 49.00
A500 replacement PSU 39.00
A590 replacement PSU 49.00
Rocgen Plus - Genlock + 149.00
Disc Wallet for 32 disks 7.95
CBM A1011 Floppy drive 48.00
A3220 Display Enhancer 99.00

Amiga CD32

with 2 free games & joy pad

Special Offer

£269

New games

igh quality

products.

technicai

A600

packs £179 A600 Lemmings pack A600 Wild Weird & W. pk £189

Zool pack A600/A1200 add £14

A600 Hd 20Mb Epic pack £269

A1200

New free games packs

5x faster. Workbench v3. 2M ram. Custom graphic 256K col. from 16.7M

Software Pack C, R D £279

A1200 No Hd £319 80M Hd £489 £535 120M Hd £519 £569

Key to Software packs: C - Comic Relief R - Race & Chase

D - Desktop Dynamite NEW Official Commodore approved Hard Disk with CBM on site.

Amiga A4000

_	
4000/030 2M 80Mb Hd	£895
4000/030 2M 120Mb Hd	£959
4000/030 6M 80Mb Hd	£1049
4000/030 6M 120Mb Hd	£1139
4000/040 6M 120Mb Hd	£1919

360K drive £29 Enables A1500's etc to read

IBM 5.25" 360K floppies

* Amiga 1500+ £249

Ex-demo limited stock

Opal Vision

while stocks last

SON

£449

DISKETTES

SONY branded (lifetime warranty)

(100% certified error free) 3.5" DS/DD 135tpi 7.50 50x 3.5" DS/DD 135tpi 32.30 100x3.5° DS/DD 135tpi 59.93 250x3.5" DS/DD 135tpi 141.00

DISKETTES SONY / DYSAN bulk (lifetime warranty)

(100% certified error free)

1	
10x 3.5" DS/DD 135tpi	5.95
50x 3.5" DS/DD 135tpi	21.86
100x3.5" DS/DD 135tpi	39.60
250x3.5" DS/DD 135tpi	94.88
40 x 3.5" Disk box with lock	5.49
50 x 3.5" Disk box with lock	5.99
100 x 3.5" Disk box with lock	7.50
Carriage on 50+ disks £3.5	3

Phone for our 70 page catalogue. All prices include 17.5% VAT EDUCATIONAL AND GOVERNMENT ORDERS WELCOME All products have a 30 day money back & 12 month warranty. Prices are subject to variation without prior notification. Please phone for express clearance of cheques. Credit APR 29.8% Established 8 years. 3 minutes from M27 Junction 11. Free parking. Open 9 to 5.30 Monday to Friday & 9 to 5 Saturday. Carriage/order. Postage 94p or £3.53 Securicor £6.46 Securicor AM £11.75



Tech.

Larger items delivered by Securicor



40-42 West Street Portchester Hants PO16 9UW Tel: 0705 647000

Amiga/Shopper Dept.

Best for service

Telephone 0705 647000

AMOS Action

Jason Holborn extends our AMOS paint program with the addition of a selection of extra painting tools.

s you will know if you've been following Amiga Shopper over the last few months, we're hard

at work on a paint program written completely in AMOS. DPaint it may not be, but already ASPaint is starting to show its true colours (ouch). Already we have added a toolbox strip, a colour selector and a couple of painting tools and this month we continue by adding a couple of extra painting tools - all done within AMOS.

This month also sees the release of a couple of new AMOS products. First up is Craft, a brand new extension that adds over 160 new commands to both AMOS and AMOS Professional. Craft offers ready-to-go fractal generation commands, a couple of very handy new selectors (including a very good colour selector), improved sound and music commands, powerful directory scaning commands and a whole lot more besides. Craft costs £24.95 and is available from Black Legend on 0727 868005. Watch for an indepth review in Amiga Shopper soon!

Another monumental piece of news is that Future Publishing (the company that bring you Amiga Shopper every month) have just published a comprehensive book on AMOS games programming entitled Ultimate AMOS. The book, which just happens to be written by me, covers virtually every aspect of programming AMOS's "special" features such as screens, bobs, rainbow, scrolling, AMAL and so much more besides. Unlike other AMOS books, however, Ultimate AMOS shows you how to apply all this knowledge to games programming. Included with the book is a disk that includes all the source

code from the book and four fullycommented AMOS games. What's more, all this can be yours for just £19.95! See the advert on page 124 for the full ordering details.

Anyway, that's enough of the blatant book pushing. Let's get stuck into this month's juicy segment of code. It's on pages 102-103, but to save you typing it all in, once again you'll find it all on the cover disk.

1/2. Before we can add the new procedures to ASPaint, we need to add a few extra lines to the

_PROCESSTOOLS procedure so that the program recognises them when the user presses the appropriate gadgets. Note that the first two If...Then constructs have already been entered, so ignore these.

2. The first If...Then construct that we enter passes control to the

LINEDRAW function if the user clicks on tool gadget number 2 in the toolbox window. This is indicated by a value of 2 being held in the **SELECTED** variable.

If the SELECTED variable contains a value of 3, the program jumps to a procedure called

_OUTLINEBOXDRAW that, logically, handles the drawing of outline boxes.

4. If the **SELECTED** variable contains a value of 4, the program jumps to a procedure called called

FILLEDBOXDRAW that, not surprisingly, handles the drawing of filled boxes.

If the SELECTED variable contains a value of 5, the program jumps to a procedure called called

OUTLINECIRCLEDRAW that - you

guessed it handles the drawing of outline circles.



8. The first of our

painting tools.



new painting tools is the line draw function that handles the drawing of straight lines.

9. The procedure is called every time the program's main loop is performed, but the

main core of the procedure is not executed unless the user is pressing the left mouse button and the mouse pointer is over the painting screen. If both of these conditions are true, then the user is marking the start of the line that they wish to draw.

10. As with all our previous painting tools, the first thing we must do is to update the "Undo" buffer so that if our users make a mistake, they can remove the line they have drawn.

11. Our paint program enables the user to reposition the line using a technique called "rubber banding", which constantly redraws the line without corrupting the background screen until the user decides that they're happy with the position of the line. This is done using AMOS's

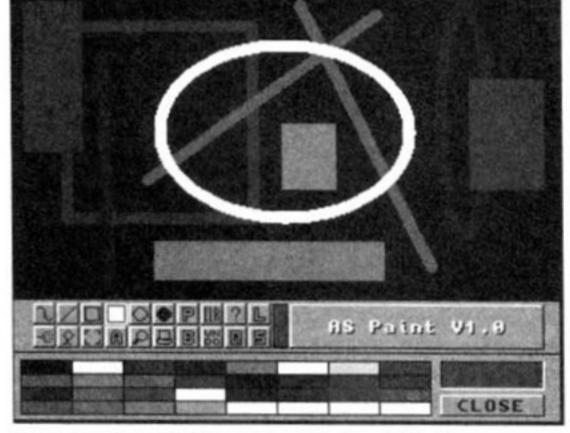
"Reverse" drawing mode. (Amiga OS programmers will know this better as JAM mode 3.) We therefore start the procedure by changing the drawing mode using the "Gr Writing" command.

12. The next thing we do is to get the 'X' and 'Y' screen coordinates of the start of the line by reading the coordinates of the mouse pointer.

The procedure then enters a "Repeat...Until" loop that constantly reads the position of the end of the line and draws a preview of the line.

14. We already have the start of the line, so we now need to read a second set of coordinates that will be used as its end coordinates.

15. Using this second set of coordinates, the line is drawn on to the screen. Note that at this point, the line is not drawn in its correct colour - because we're drawing in JAM mode 3, the pixels that lie beneath the line are simply reversed. The program then waits for a vertical blank (so that the user can actually see the line) and then removes it by drawing a reversed line using exactly



With all this month's code added to ASPaint, you should be able to draw lines, boxes and circles. And you don't even need to type all the code in yourself you'll find it all on this issue's cover disk!

the same coordinates. Drawing a reversed line on top of the reversed line we have already drawn restores the display to its original state.

16. If the user lets go of the mouse pointer, the two sets of coordinates that we have are taken to be correct. so the procedure moves on to actually draw the line into the display. In order for the line to be drawn correctly, the drawing mode is changed to JAMO.

17. Just like DPaint, our paint program enables the user to use a variety of different brush sizes and styles. The first thing that the procedure therefore does before drawing the line into the display is to check the type of brush being used.

18. If the user is using a simple onepixel brush (the default setting), the line is drawn directly into the display using the AMOS Draw function.

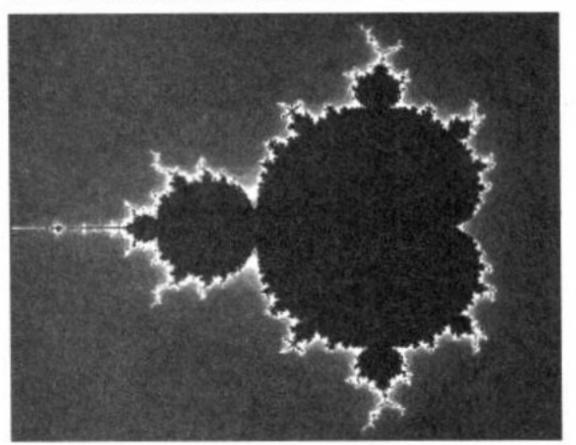
19. If, on the other hand, the BRUSHSIZE variable contains a value greater than zero, a procedure called **DRAWBRUSHLINE** is called. This new procedure draws a line using the currently-selected brush. We'll cover this procedure later.

20. Well, that's the line draw function complete. Now we move on to the _OUTLINEBOXDRAW procedure.

21. Once again, the first thing we do is update the "Undo" buffer so that the result of this drawing function can be removed if the user wishes.

22. Once again, ASPaint's outline box tool uses AMOS's "JAM3" drawing mode to allow you to expand and shrink the size of the box in real time until you get the exact size that you want. The procedure therefore switches to JAM3 mode using the "Gr Writing" command.

23. Before we can start drawing the

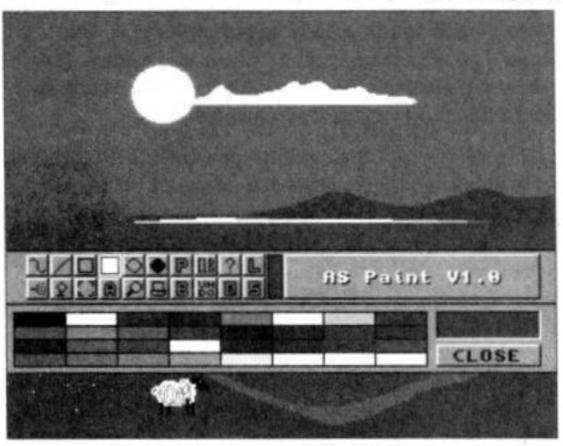


The new Craft AMOS extension provides 160 new commands, including support for fractal generation.

box on to the screen, the current position of the mouse pointer is read and converted to screen coordinates. These coordinates will be used as the "origin" point of the box and the box will be anchored at this point.

24. With the origin of the box now fixed, the first set of coordinates is read into the variables 'X1' and 'Y1'.

25. The technique used to draw the box is very similar to the technique we used to draw the preview of the line in the **_LINEDRAW** function. The



Let your artistic talents run wild with ASPaint. As they say on Blue Peter – here's one I prepared earlier!

box is drawn on to the screen and the program is halted until the next vertical blanking period before the box is removed.

26. Now that we know the exact coordinates of the box, the drawing mode is reset back to JAMO.

27. Just like the _LINEDRAW

function, the box drawing tool can take advantage of brushes of different sizes and shapes. Once again, the box is drawn onto the screen using two different techniques, depending upon the current brush setting.

28. If the brushsize is set to zero (indicating a single-pixel brush), the box is drawn onto the screen using AMOS's own "Box" command.

29. If the user has selected a brush that is larger than just a single pixel,

has to be drawn in four stages using the same __DRAWBRUSHLINE function that we used in the line draw function. Each edge of the box is drawn separately as a straight line, and these eventually join up to form a perfect

however, the box

30. With the outline box draw tool complete, we move

square.

on to the filled box tool. This is essentially the same routine but is more complicated, because AMOS's "Bar" command (the command that draws filled boxes) is rather picky about its parameters.

31. After checking both that the left mouse button is depressed and that the mouse pointer lies over the

drawing screen, the "Undo" buffer is updated.

32. Once again, we'll allow the user to "rubber band" the box in real time so that they can stretch and compress it at will. The program therefore starts by switching AMOS's drawing mode to JAM3.

33. The origin of the box is then read from the mouse pointer and stored into the two variables 'X2' and 'Y2'. These are automatically converted to the screen coordinates system using the "X Screen" and "Y Screen" functions.

34. The routine then enters a "Repeat...Until" loop that is performed until the user lets go of the left mouse button.

35. AMOS's "Bar" command is very fussy indeed about the format of the parameters that are passed to it. The first two coordinates must be smaller than the second set. If not, your AMOS program will crash. Our filled box routine gets around this problem by constantly monitoring the two sets of coordinates to make sure that the "Bar" command is passed legal values. The first of these checks is made to see whether we've already swapped the 'X' coordinates. This is indicated by the variable 'XT' being set to 1. If the 'X' coordinates have been swapped, they are swapped back so that we don't lose the origin coordinates when a new set of coordinates is read from the mouse pointer.

36. The second check is performed to see whether we've already swapped the 'Y' coordinates (indicated by 'YT' being set to 1). If they have been swapped, they are swapped back.

37. With the coordinates restored, a new set of coordinates is read from the mouse pointer and placed into the variables 'X1' and 'Y1'.

38. At the moment, the coordinates are in their original form, so the two flags 'XT' and 'YT' are reset to zero.

39. The variable 'X1' is used as the left-hand coordinate of the box, which means it must be less than 'X2' if the "Bar" command is to accept it. We therefore check to make sure that this is true. If it isn't, the two variables are swapped and 'XT' is set to 1 (indicating that they have been swapped).

40. Just like the 'X' variables, the 'Y1' variable must also be less than the 'Y2' variable. If it isn't, 'Y1' and 'Y2' are swapped and the variable 'Y1' is set to 1 so that AMOS knows we've swapped them.

41. The "Bar" command also insists that all four coordinates must be different – if 'X2' and 'Y2' were the same, for example, your program would crash. The program therefore check to make sure that all four values are unique before drawing the filled box onto the screen, waiting for a vertical blank and then removing it. This section of code handles

BREARGHEGODE

1. Procedure _PROCESSTOOLS[SELECTED]
2. If SELECTED=1

__FREEHANDDRAW
End If
If SELECTED=12

_FILLAREA

3. If SELECTED=2 _LINEDRAW End If

4. If SELECTED=3
_OUTLINEBOXDRAW
End If

5. If SELECTED=4
__FILLEDBOXDRAW

End If

6. If SELECTED=5

_OUTLINECIRCLEDRAW
End If

7. Rem *** Rest of paint tool code goes here

If SELECTED=18
_UNDO
End If
End Proc

8. Procedure _LINEDRAW Screen 0

9. If Mouse Key=1 and Mouse Screen=0

10. _UPDATEUNDOBUFFER

Ink CURCOLOR 11. Gr Writing 3

12. X2=X Screen(X Mouse) Y2=Y Screen(Y Mouse)

13. Repeat

14. X1=X Screen(X Mouse)
Y1=Y Screen(Y Mouse)

Draw X1, Y1 To X2, Y2
Wait Vbl

Draw X1, Y1 To X2, Y2 Until Mouse Key=0

16. Gr Writing 0
17. If BRUSHSIZE=0

18. Draw X1,Y1 To X2,Y2 Else

_DRAWBRUSHLINE[X1,Y1,X2,Y2]

End If
End If
End Proc

Screen 0

20.Procedure _OUTLINEBOXDRAW

If Mouse Key=1 and Mouse Screen=0

21. _UPDATEUNDOBUFFER

Ink CURCOLOR 22. Gr Writing 3

23. X2=X Screen(X Mouse) Y2=Y Screen(Y Mouse) Repeat

24. X1=X Screen(X Mouse)
Y1=Y Screen(Y Mouse)

25. Box X1, Y1 To X2, Y2

Wait Vbl Box X1,Y1 To X2,Y2 Until Mouse Key=0

26. Gr Writing 0 27. If BRUSHSIZE=0

28. Box X1, Y1 To X2, Y2

Plse

29. __DRAWBRUSHLINE[X1,Y1,X2,Y1]

__DRAWBRUSHLINE[X2,Y1,X2,Y2]

_DRAWBRUSHLINE[X2,Y2,X1,Y2]
_DRAWBRUSHLINE[X1,Y2,X1,Y1]
End If

End If End Proc

30.Procedure _FILLEDBOXDRAW Screen 0

If Mouse Key=1 and Mouse Screen=0
31. _UPDATEUNDOBUFFER

Ink CURCOLOR
2. Gr Writing 3

32. Gr writing 3

33. X2=X Screen(X Mouse) Y2=Y Screen(Y Mouse)

34. Repeat

If XT=1

displaying the "preview" of the box.

- 42. The loop is then terminated if the user lets go of the left mouse button. The two sets of coordinates are then taken to be correct.
- 43. After swapping back to JAMO (graphic replace mode) and checking to make sure that the two sets of coordinates are different, the box is drawn onto the screen.
- 44. Phew! That's another tool complete. Now we move on to the **OUTLINECIRCLE** procedure that is responsible for drawing outlined circles. This too is fairly similar to the other functions, except this time we make use of AMOS's powerful blitter-based "Ellipse" command.
- 45. Once again, after checking that the user is actually trying to draw onto the screen and updating the "Undo" buffer accordingly, we set the graphics drawing mode to JAM3.
- 46. The centre point of the circle is then read from the mouse pointer and placed into the variables 'X1' and 'Y1'.
- 47. The routine then enters a "Repeat...Until" loop that is performed until the left mouse button is released. The first thing that this loop does is to read the radius of the circle from the mouse pointer.
- 48. AMOS's "Ellipse" command is just as picky about the format of its parameters as the "Bar" command.

so we need to start by making sure that the two sets of coordinates that we pass are not the same. If 'X1' and 'X2' were to be the same, for example, the 'X' radius value would be an illegal value of zero.

- 49. Obviously the radius of a circle is a value relative to the centre point of the circle, so we need to convert the "absolute" values returned by the "X Mouse" and "Y Mouse" functions into valid 'X' and 'Y' radius values. We start by checking to see whether the value in 'X1' is greater than the circle's 'X' centre point. If it is, 'X1' is modified by subtracting the value of 'X2' from it. If 'X2' is greater than 'X1', however, the value of 'X1' is subtracted from 'X2' and placed into 'X1'. This gives us a legal 'X' radius value.
- 50. The same procedure is then carried out for the 'Y' radius value so that the value held in 'Y1' is a valid radius value.
- 51. The "preview" of the circle is then drawn, and removed after a vertical blanking period using the "Ellipse" command.
- 52. To enable our paint program to draw circles using the brush styles that we defined last month, we need to check to see whether the user has selected either a single-pixel brush ("BRUSHSIZE = 0'" or any other brush ("BRUSHSIZE > 0").
- 53. If the user has selected just a single-pixel brush, the circle is drawn

Screen 0

onto the screen using the "Ellipse" command.

- 54. If the user has selected any other brush style, we can no longer use the "Ellipse" function to draw our circle. We therefore have to draw it ourselves using the math functions Sine and Cosine. This takes some time, so we need to let the user know that AMOS is drawing a circle by turning the mouse pointer into a "sleepy" pointer.
- 55. By default, the Sine and Cosine functions use radians, which aren't really suitable for our needs. We therefore switch to more usable degrees using the command of the same name.
- 56. Each point in the circle must be calculated separately and therefore we use a loop that counts from 0 to 360, which plots a point for each of the 360 degrees in a circle.
- 57. The 'X' and 'Y' coordinates of our circle are then calculated using the "Sin()" and "Cos()" functions.
- 58. The results from these two calculations are then used as the coordinates of a point within the circumferance of our circle which is drawn onto the screen by passing the two values to the

DRAWBRUSHPOINT function that we covered last month.

59. The _DRAWBRUSHLINE procedure is a slightly modified version of the _DRAWBRUSHPOINT

procedure. It simply draws a line in the currently-selected brush style between two coordinates.

- 60. The brush pattern definitions are held in a two dimension array containing eight different values for each brush. These values are extracted by using a loop that counts from zero to 7.
- 61. Each of the eight values assigned to each brush definition is transferred into a string variable called "BITMAP\$" in binary notation. In many ways, this technique is the same as the technique we used to draw the toolbox gadgets. A zero in the binary pattern turns the pen off and a value of 1 turns it on.
- 62. Each bit in the binary pattern is extracted in turn by entering a second loop that counts from 1 to 9.
- 63. By default, each and every brush will be drawn on the screen using the 'X1' and 'Y1' coordinates as the origin at the top left-hand corner of the brush. In order to centralise the brush so that it is drawn immediately below the mouse pointer, a set of offsets is calculated.
- 64. Finally, a quick "If...Then" decision is made to check whether a point should be plotted. Using the counter that is updated by the second loop, each bit in the binary number is checked to see whether it is a 1 or a zero. If it is a 1, a dot is plotted onto the screen using the AMOS "Plot" command. (AS)

45 - CITT

	End If	XT=X2 : X2=X1 : X1=XT : XT=1
36.		If YT=1
		YT=Y2 : Y2=Y1 : Y1=YT : YT=1
	End If	
37.		X1=X Screen(X Mouse)
	Y1=Y Sci	reen(Y Mouse)
38.		XT=0 : YT=0
39.		If X1>X2
		XT=X2 : X2=X1 : X1=XT : XT=1
	End If	
40.		If Y1>Y2
		YT=Y2 : Y2=Y1 : Y1=YT : YT=1
	End If	
41.		If X1<>X2 and Y1<>Y2
		Bar X1, Y1 To X2, Y2
		Wait Vbl
		Bar X1, Y1 To X2, Y2
42.		End If
	Until Mou	se Key=0
	Gr Writin	
43.	If X1<>	X2 and Y1<>Y2
	Bar X1,	Y1 To X2, Y2
	End If	
	nd If	
End	Proc	

44.Procedure _OUTLINECIRCLEDRAW

```
If Mouse Key=1 and Mouse Screen=0
    _UPDATEUNDOBUFFER

    Ink CURCOLOR

    Gr Writing 3
46. X2=X Screen(X Mouse)
    Y2=Y Screen(Y Mouse)
    Repeat
47.
               X1=X Screen(X Mouse)
      Y1=Y Screen(Y Mouse)
               If X1<>X2 and Y1<>Y2
49.
                       If X1>X2
                       X1=X1-X2
               Else
                       X1=X2-X1
               End If
                       If Y1>Y2
                       Y1=Y1-Y2
               Else
                       Y1=Y2-Y1
               End If
51.
                       Ellipse X2, Y2, X1, Y1
               Wait Vbl
                Ellipse X2, Y2, X1, Y1
      End If
    Until Mouse Key=0
     Gr Writing 0
52. If BRUSHSIZE=0
```

Mark Street Street Street	THE RESIDENCE OF THE PARTY OF T
53.	Ellipse X2, Y2, X1, Y1
Else	
54.	Change Mouse 3
55.	Degree
56.	For C=0 To 360
57.	X=Sin(C)*X1+X2
	Y=Cos(C)*Y1+Y2
58.	_DRAWBRUSHPOINT[X,Y]
Next C	
Change	Mouse 2
End If	
End If	
End Proc	
59. Procedure	_DRAWBRUSHLINE[X1,Y1,X2,Y2]
60. For A=0	
61. BITMAP	\$=Bin\$(BRUSH(BRUSHSIZE-1,A),8)
62. For B=	(2008) : : : : : : : : : : : : : : : : : : :
63.	XOFF=-5+B
YOFF=-	3+A
64.	If Mid\$(BITMAP\$, B, 1) ="1"
	Draw X1+XOFF, Y1+YOFF To
X2+XOFF, Y2+Y	OFF
End If	
Next B	
Next A	
End Proc	



Have your say, and perhaps win £25 into the bargain! Send your missives to: "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW.

"PERUSED THE PAGES"

I am one of a small but significant group of serious Amiga enthusiasts whose specialist interest is theological study. As I have perused the pages of your excellent magazine, I have found a reference in advertisements to only one particular program relating to my particular interest and that is The King James Bible, a PD package which I have acquired, and which I have found to be of considerable

In contrast, I note that a wide range of programs have been produced on other computer formats to meet the needs of Bible students. To list but a few: the complete Bible in numerous translations, including the New International Version, the New Living Bible, the American Standard

Bible, and the Good News Bible; Bible dictionaries; a Bible handbook; Bible commentaries; various Concordances; Hebrew and greek Dictionaries; a Bible Encyclopaedia; and a Bible Atlas.

It is possible that such programs have already been produced to function on the Amiga range of computers? I am sure that serious Amiga users like myself would welcome any information which could be provided through Amiga Shopper about additional Bible-based computer software.

> John Budge Glasgow Scotland

Being a member of God's loyal opposition, I'm afraid I don't know of any Bible programs. However, there is a group of people who may be able to help: Bible Bureau. Contact Ad at 24 Brodie House, 10 Harcourt Avenue, Wallington, Surrey SM6 8AR **2** 081 669 7485.

"ONE SMALL GRIPE"

One small gripe I have is about the way that some of the public domain software is reviewed in Amiga Shopper. 95% of the time I find lan's reviews useful and helpful. When I have the product he is describing, I find I tend to agree with the comments he makes.

However, I'm a developer of Windows (and Intuition!) based packages, and I feel that sometimes he is a little negative when reviewing programming or development tools. The review that finally made me write something was the one of the Touch program, in Amiga Shopper 32. Ian may not consider such tools useful, but I (and I'm sure many programmers too) find this sort of tool vital when it comes to development and project management.

If I "touch", for example, all the source files for a given project at a recognised point in the development, then later I have an obvious and effective method of checking which files have changed since that point.

This is perhaps not the best example, but the use of Touch is not really the point of the gripe. What I'm really trying to say is that in future I'd like to see lan be a bit more constructive when he reviews this kind of software. If he genuinely can't see the point of something, that's fair enough, but then instead of knocking it, could he just mention it under a list of items "Also on the disk..."?

> Rob Uttley Charlton London

I asked Ian for his reply, and this is what he said: "I'm very surprised to hear you think that, and it's certainly not my intention."

I'd add that I do think it's a reviewer's job to assess the usefulness of a product. lan couldn't see a use in the case of Touch, and you've put him right. Fair enough.

"A BIG STEP BACK"

I notice at the end of your column that invite letters about the software which we'd like to see on the Amiga. I wonder if you would consider the subject of Windows NT? I realise that it's a processor and memory hog, and probably a big step back from AmigaDOS and Workbench. However, given that much, if not most, of its functionality already exists in the Amiga, it would not be a major job for a large company (or really

ambitious PD author) to convert and could with one set make most popular software packages available for the Amiga (when they are rewritten for NT, of course).

What do you think? Just how practical is such an idea?

> **Graham Keellings** Munich Germany

I think writing some sort of Windows NT emulator would actually be a huge job, and then there's the problem of copyright...

In fact, Commodore's next machine (currently code-named the A5000 and scheduled for release late next year) is expected to have support for Windows NT. It will do so by having a processor which is compatible with the operating system - you'll be able to install it on the A5000 as you would on a PC.

In the meantime, we've been asking some of the software big guns (Microsoft and friends) if they are planning to port any of their applications programs over to the Amiga. You can read what they have to say in next month's issue.

"REPAIRED ONCE BEFORE"

Back in May I bought an 85Mb hard drive from Diamond Computers at their Manchester store. Recently it started to behave badly, with checksum errors and so forth. Trying to contact Diamond proved fruitless, and I finally found out they had gone bust.

A friend suggested I contact the drive manufacturer (Western Digital), which I did. The lady I spoke to there told me they would honour the guarantee. Great, I thought, one hard drive repaired by the manufacturer and no more problems. She asked me a for a few details about the drive, including its model number, and then asked if the drive had already been repaired once before. I told her no, that I had bought it brand new, but she insisted that what I had was a reconditioned drive. I was given a repair order number from the manufacturer to send the drive back to the factory in Singapore for the repair to be carried out.

What I want to know is, who else besides me got ripped off by being sold reconditioned drives disguised as new ones?

> Barry Miller Widnes Cheshire

I'm sure this must be an isolated incident. Well, I hope it is, anyway. It just goes to show, you can never be too careful.

Please keep your letters coming the best each month wins £25.





I think your cover disks are a good idea. Would it be possible to include on £25 WINNER one (or more) of them

a public domain database with all the articles and so on in all issues, entered and crossreferenced, giving easy access to items which we know are there somewhere, but can't find? It's a daunting task to search by hand through the now sizeable library of Amiga Shoppers!

Also, I know that you try to cover all aspects of computing, but (there's always a "but"!) don't you think too much space is given over to DTP and reams of copy about fonts? In the limited space available, could we have more

articles on using packages painting, digitising, sampling etc.? H J J Weddle Heaton **Newcastle Upon Tyne**

We were, some time ago, planning to release an index in conjunction with a software house, but that fell through. It's still a good idea, and one I hope to implement soon, but the information would be copyright Future Publishing, not PD.

I agree with your other point and intend to shift the emphasis of the magazine more towards the "using" or tutorial side of things. Still, don't you think articles on fonts are useful for people who want to know how to use their word processors and DTP packages?



EGVP

the world."

Power up your A500 with the very best in Amiga peripherals. Give your computer a new lease of life with a hard drive or accelerator plus hard drive from GVP.

500 OWNERS

These powerful, award-winning products plug neatly into your A500 or A500 plus, giving you more storage and more speed. The improvements don't stop there! In almost every area of Amiga operations these GVP peripherals can enhance the performance of your A500 or A500 PLUS. Both models can upgrade your Amiga's RAM, making operations run even faster. You can add a PC emulator, (featured below left), which enables you to run thousands of PC software titles. Further hard drives, back-up systems and CD-ROM drives can also be added via the built-in SCSI interface. The list is endless, GVP's HD8+ and A530 are the undisputed premier Amiga peripherals available.

If you were thinking about upgrading to an A1200 or A4000, think again. With a GVP A530 Accelerator upgrade, your A500 will be 14 times faster than a normal A500, almost nine times faster than an A1200 and over one and a half times faster than the mighty A4000 030 (see chart below).

AT NEW LOW PRICES!

PC EMULATOR

EGVP

FOR USE WITH HD8+ or A530

For extra power and flexibility you can also use GVP's custom expansion slot (mini slot) to fit a GVP PC emulator. This compact circuit board turns your Amiga 500 into a fully featured PC compatible computer, capable of running thousands of PC software titles, including Windows and MS-DOS 6.

- 80286 16MHz processor
- Norton SI index of 15
- Compatible with MS-DOS version 3.2 or later
- Windows 3.x compatible
- Includes 512K of FAST RAM
- Built-in video adaptor emulates VGA/EGA (mono), and Hercules
- Socket for optional 80287 co-processor
- Hard drive compatible
- Emulation support of Parallel and Serial ports, sound, realtime clock, CMOS RAM and extended memory

PC EMULATOR INC VAT - EMU 0500

RAM EXPANSION

A GVP HD8+ Hard Drive will have an immediate effect on your Amiga. Where you used to constantly swap disks, wait for files and programs to load and sit around waiting for disk accesses, you will now be pushed to keep up with the speed of your Amiga. Hard drives are used for the same storage purposes as floppy disks, but can hold a great deal more information and access this data much more quickly.

The A500 HD8+ (pictured above) provides the ultimate in hard drive performance, it can also increase the memory of your Amiga by up to 8mb, support up to six SCSI devices and provide PC compatible emulation via its custom expansion slot (mini slot) see left.

COMPARISON CHART

FEATURES/MODEL	GVP HD8+	TRIFECTA LX	COMMODORE A590 20mb	EVESHAM REFERENCE 100
*TRANSFER RATE: Kb per second	1066	1028	564	400
GVP DESIGNER STYLING	~			
RAM EXPANSION(MAX)	8мь	8мь	2мь	4Mb
MINI SLOT (FOR FUTURE EXPANSION)	~	~		
SCSI INTERFACE	~	~	~	~
GVP PERFORMANCE Faaast ROM	~			
DEDICATED POWER SUPPLY	~	~	~	
PRICES FROM	£199	£295	£159	£329

* Figures taken from Amiga Computing, October 1993 the undisputed fastest

HD8+ 42Mb HD 0Mb RAM Amiga hard drive available in **PREVIOUS** Computer Mart April '92 PRICE "Without doubt the best hard drive available for the A500 ...

Amiga Format April '93 BLUECHIP PREVIOUS PREVIOUS PRICE PRICE £499 NC VAT - HAR 0888 INC VAT - HAR 0922

MORE SPEED



and an Accelerator. Inside is a full Motorola 68030EC processor running at 40MHz, making your A500 faster than you thought possible - almost nine times faster than an A1200. And, fitting a PGA maths co-processor (40MHz 68882, ref: UPG 1982, £129 inc VAT) can improve this still further, with some operations being 300 times faster than an A500. In addition you can add up to 8Mb of 32-bit RAM, which further enhances performance.

FASTER THAN AN A1200 or A4000 030 An A500 with the GVP A530 fitted will be considerably faster than either the A1200 or A4000. This is possible because the A530 uses a 40MHz 68030EC processor, whilst the A1200 uses the slower 14.19MHz 68020EC

processor and the A4000-030 uses the 25MHz 68030EC processor. Features include:

40MHz 68030EC Processor (the A1200 has

a slower 14MHz 68020EC processor)

Up to 8_{Mb} of 32-bit Memory, 1_{Mb} of 32-bit Fitted

PLUS Same Features as HD8+

Mini-slot for Future Expansions, see PC Emulator - far left

Cut Off Switch for Game Compatibility

Dedicated Power Supply and Fan Unlike Many Competitors

- Factory Installed Hard Disk

 High Speed DMA SCSI Controller - Can Handle

7 Devices

A530 030

SYS INFO CPU MIPS SPEED DIFFERENCE TO STANDARD ASSO. 105% A500 + | A4000 | A1200 |

GVP's A530 includes 2 SIMM sockets for easy Fast RAM installation. One socket already contains 1 No RAM. Options are 2 x 1 we cards, 1 or 2 x 4we cards offering 2we, 4mb or 8mb of RAM. 1Mb RAM - £69 | 4Mb RAM - £179 INC VAT - RAM 3216 | INC VAT - RAM 3246

SECTION 1

"I liked the A530 so much

that I bought one"

CU-Amiga October

92 - 97%

A530 40MHZ 68030EC, 42Mb HD, 1Mb RAM **PREVIOUS** PRICE INC VAT - HAR 0962

INC VAT - HAR 0968 2899 2599 INC VAT - HAR 0974

ALL PRICES INCLUDE VAT - DELIVERY IS FREE OF CHARGE IN THE UK MAINLAND

		00.10.35 . 05
The second line was a second line with the second	Married Street, and the Street, Street, St. St.	the same of the sa
	E AMIGA SI	
		THE RESIDENCE IN COLUMN 2 IN C

Before you decide when to buy your Amiga peripherals, we suggest you think very carefully about WHERE you buy them. Consider what it will be like a few months after buying them, when you may require help and advice with your new purchase. And, will the company you buy

from contact you with details of new products? At Silica, we ensure that you will have nothing to worry about. With our unrivalled experience and expertise, we can now meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Service".

- COMMODORE APPROVED UPGRADES
- Official Hard Drive upgrades with ICL on-site warranty. • FREE OVERNIGHT DELIVERY
- On all hardware orders shipped in the UK mainland. TECHNICAL SUPPORT HELPLINE: A team of Amiga technical experts will be at your service.
- PRICE MATCH:
- We match competitors on a "Same product Same price" basis. ESTABLISHED 15 YEARS
- We have a proven track record in professional computer sales. PART OF A \$50M A YEAR COMPANY:
- With over 200 staff We are solid, reliable and profitable. BUSINESS + EDUCATION + GOVERNMENT: Volume discounts are available. Tel: 081-308 0888.

- We have demonstration and training facilities at all our stores. • THE FULL STOCK RAN All of your Amiga requirements are available from one supplier.
 - Will be mailed to you, with special reduced price Amiga offers, as well as details on all Amiga software and peripherals.
 - We accept most major credit cards, cash, cheque or monthly terms (APR 29.8% - written quotes on request).



HOT 081-309 1111

MAIL ORDER: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Order Lines Open: Mon-Sat 9.00am-6.00pm No Late Night Opening	Tel: 081-309 1111 Fax No: 081-308 0608
LONDON SHOP: 52 Tottenham Court Road, London, W1P 0BA Opening Hours: Mon-Sat 9.30am-6.00pm 52 Tottenham Court Road, London, W1P 0BA No Late Night Opening	Tel: 071-580 4000 Fax No: 071-323 4737
LONDON SHOP: Selfridges (Basement Arena), Oxford Street, London, W1A 1AB Opening Hours: Mon-Sat 9.30am-7.00pm Late Night: Thursday - 8pm	Tel: 071-629 1234 Extension: 3914
SIDCUP SHOP: 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX Opening Hours: Mon-Sat 9.00am-5.30pm Late Night: Friday - 7pm	Tel: 081-302 8811 Fax No: 081-309 0017
ESSEX SHOP: Keddies (2nd Floor), High Street, Southend-on-Sea, Essex, SS1 1LA Opening Hours: Mon-Fri 9:30am-5:30pm (Sat 9:00am-6:00pm) Late Night: Thursday - 7pm	Tel: 0702 468039 Fax No: 0702 468039
IPSWICH SHOP: Debenhams (2nd Floor), Waterloo House, Westgate St, Ipswich, IP1 3EH Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm) Late Night: Thursday - 9pm	Tel: 0473 221313 Fax No: 0473 287762

						-	_		-		
0:	Silica	Systems.	AMSHP-0194-120.	1-4	The Mews.	Hatherley	Rd.	Sidcup.	Kent.	DA14 4DX	

To: Silica	Systems, A	MSHP-0194	120, 1-4	The Mew	s, Hatherley	y Rd, Sidcu	p, Kent,	DA14	4DX
PLE/	ASE SI	END M	E A	GVP	COLO	UR BI	ROCI	HUR	E
Mr/Mrs/Mi	iss/Ms:	Initials:	(Surname:					
Company	Name (if	applicable): .							
Address:									
				Post	code:				
Tel (Home	e):			Tel	Work):				
Which co	mouter(s).	if any, do yo	u own?						120A

E&OE - Advertised prices and specifications may change - Please return the coupon for the

Here's your chance to complete your collection and catch up on all the



2D Paint packages reviewed and rated; which programming language is the one for you; PageStream 2, Scala, Broadcast Titler and the KCS
Powerboard PC emulator reviewed...£3

ISSUE 14

ISSUE 21

ISSUE 27

MARC BASTELL

AMIGA

TURBOCHARGE
YOUR AMIGA
MARC BASTELL

Accelerator cards put head-to-head; the versions of BASIC compared; first installment of C programming tutorial; Bars & Pipes Professional and AT-Once PC emulator reviewed£3

ISSUE 15

ISSUE 22

ISSUE 28

AND CONTROL OF THE PARTY OF THE

Ten of the most popular printers checked out; creating a structured drawing package with C; Wordworth, Real3D, Imagine, Superbase 4, T_EX and Pro 24 reviewed£3

ISSUE 16

ISSUE 23

DIP POWER

ON VIDEO

ON SHOW

A complete guide to buying Amigas and related hardware; the HAM-E graphics system, RocGen genlock, KCS sequencer reviews PLUS tips on DTP, MIDI and spreadsheets.....£3

ISSUE 8

ISSUE 17

ISSUE 24

A A A I G A

SHOW TIME Management of the second of the sec

Hand scanners reviewed and rated;
15 memory expansions compared;
incorporating sound effects and
soundtracks into your animations; and
artificial intelligence£3

POST CODES

MORPHISM

MORP

The best in PD software – how to set up a complete software system for nothing; the PostScript interpreter Post, ImageMaster and SaxonScript Professional reviewed.....£3

200 top tips – advice on everything from accelerators to Workbench, BASIC to WPs, C to video; Hit Kit, Professional Calc and HAMA's 290 genlock reviewed£3

CODE III MARKAGE LIMAS

The top desktop publishing packages reviewed and rated; understanding typography; write adventure games with *Visionary*; tips on writing your own arcade game.....£3

A NAGA
SHOPPER
The best year yet?

Interview of the control of the

Amiga Shopper Awards. Cover disk:
CG fonts, DirWork, screen blanker,
ICalc, LhA, PowerSnap 2, RDES,
ReOrg, Safe Delete, SPClock, SysInfo
and Virus Checker.....£4

A MAIGA Will PLUS

20 printers – dot matrix, inkjet and laser – reviewed and rated; beginner's Amiga guide; spreadsheet tutorial; guide to AmigaDOS 3; code clinic; sample storage techniques.....£3



How to fit a hard drive to an A600 or A1200. Cover disk: Alert, Cycle To Menu, Kwikbackup, LhA, ReqTools, SnoopDOS, Virus Checker, assembler and linker package.....£4

SHOPPER
Find your way out of the memory maze

RAM – what it is and what to buy in our in-depth round-up and tutorial; DIY hardware repairs; eliminating MIDI faults; Art Expression and G-Lock genlock reviewed£3

AMIGA AMIGA

Upgrade your A500 to A1200 level; accelerator round-up. Cover Disk:
OctaMED, XOper, Move file mover,
JuliaMove, appointment scheduler,
source code and Virus Checker......£4

MAKE MASKET STATES OF THE STAT

How to make money with your Amiga;
Amiga animations on TV; legal advice;
chords with OctaMED; Directory Opus,
Emplant and Art Department
Professional reviewed.....£4

COMPUTER CRIME

Computer crime and how to protect yourself from it; Power XL high-density floppy, Ami-Back back-up system, VLab YC digitiser and MBX1230 accelerator reviewed.....£4



Video on the cheap – the techniques and low-cost software you need; how to use fonts; *Proper Grammar*, TechnoSound Turbo 2 and *Powerbase* reviewed£4

ISSUE 30

advice, reviews, tutorials and features you might have missed out on!

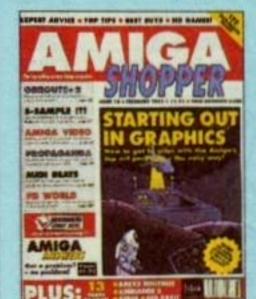
ISSUE 10

ISSUE 20



ISSUE 9

The complete Amiga software guide; how to receive satellite and radio transmissions; designing Christmas cards with Professional Page; reviews of Scala and the A500 Plus£3



How best to draw with Deluxe Paint; the guide to the best sound samplers available; budget business packages; GB Route Plus 2, Showmaker and Rendale Super 8802 reviewed£3

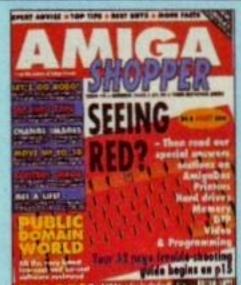


CDTV and its software get a good going over; how to perfect your printing; Harlequin graphics board, Stereo Master sampler and KCS Power Board PC emulator reviewed.....£3



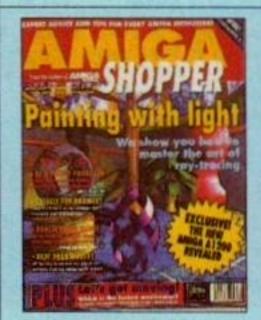
FREE Tracy covermount and how to use it in our animation special; the unforgettable guide to Amiga memory; Miracle Plano Teaching System and RocTec hard drive reviewed£3

ISSUE 13



ISSUE 18

Amiga Answers special – 32 pages of solutions to problems on everything from AmigaDOS to video; using lighting to enhance your 3D graphics creations; Maxiplan 4 reviewed£3



Step-by-step guide to ray-tracing; accelerator board round-up' mutlitasking tutorial; build a ROM switcher; AMOS Professional and Opalvision reviewed.....£3

ISSUE 26



and edito Com Che



ISSUE 32



ISSUE 11

BACK ISSUES ORDER FORM

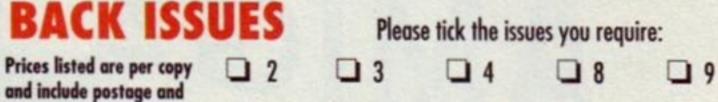
SEND THIS FORM (no stamp required) TO: Amiga Shopper, Future Publishing Ltd, FREEPOST, Somerton, Somerset, TA11 7BR

Do not send cash through the post with your mail orders Please make all cheques payable to Future Publishing Limited

ISSUE 25

ISSUE 31





13

18

packing. 011 **1**0 *Asterisk denotes issues with cover disk included. **1**6 **17** Issue numbers not listed are sold out **2** 22 □ 23* **24** □ 25* □ 26 □ 27* **29** 28 29 **30**

	D.S.	HOPPER	
V			
	1		

14

20

15

□ 21*

cker£4	TypeSmith reviewed
rated. Cover Disk: EdWord text or/WP, AZSpell spelling checker, puGraphic fonts and Virus	The Amiga Exposed; get the best from your samples; fractal landscapes; V back-up system, Personal Paint and
top word processors reviewed	rilla out now your Ailinga works with

AN Tabasa MAIS Tabasa MAIS	and in
	35
AMIGA	PROBLEMS? TAKE
U	LILI LILI

PODE ADVICE AND THE TEX SEEDS ARREA DESIGNATION OF

Amiga Answers special - 26 pages of advice. Cover disk: debugging utilities, Flexer, EasyCalc, PayAdvice, ASPaint source code, Address book source code, Virus Checker 6.30£4



Scanners special - reviews of colour scanners and their software. Cover disk: ACC Hardware Programming Guide, MapStation, Listings, Alarm, ASPaint and QuickTools£4

3 1	32			
Total amount	payable: £	.00	□ BINDER	£4.95
Name				
Address				
Post code				
Telephone I	lo			
Method of	payment (please circle)	Access •	Visa • Cheque •	PO .
Credit Card	No		Expiry Date	
Signature				

Hard Disks Cheap!

Fit low cost 3.5" hard disks* into A1200/A600

As used by dealers.

Kit & instructions only £26 inc

Kit & 170MB IBM Hard disk £199 inc

*Must be 1" high. Meedmore Ltd 051-521-2202

NEW! SWITCHQUIZ

Amazing question & answer system with hand held modules. Program & question disks. Specialised subject disks available soon. 4 way multi-choice format. 2 or 4 player.





SPECIAL INTRODUCTORY PRICE

2 PLAYE

BUILD YOUR OWN ROBOT

AMIGA INPUT/OUTPUT PORT

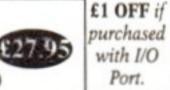
Now you can use your Amiga to switch electric motors, respond to sensors and control robotic devices, 11 Outputs for motors etc.

Up to 13 inputs for sensors + 2 analog inputs. Easy to program in AMIGA BASIC, AMOS, GFA & HISOFT. 21 page User Manual.

*An outstanding value for money product." Amiga Computing NEWI I/O PORT with built in dual motor drive £39.95

AMAZING SENSOR & CONTROL EXPERIMENTERS KIT (27.95

TEMPERATURE & LIGHT EXPERIMENTERS KIT (211.95



Please send cheque payable to SWITCHSOFT or ring Switchsoft on 0325 369369 / 0325 365773
£1.50 P&P. Overseas add £4.
SWITCHSOFT SWITCHSOFT, Dept ASH194, 26 Ridgeway, Darlington, Co. Durham DL3 0SF

If not satisfied cerum any product within 10 days for a full refund.

AMIGA FROM DTBS

A1200 Next Steps	14.95
Amiga BASIC Inside & Out	£19.95
Assembler Insider Guide	
Amiga 3D Graphics in BASIC	
Amiga Intern	£32.95
Mastering Amiga Workbench 2	£19.95
Amiga DOS Inside & Out (d)	£19.95
Best Amiga Tricks & Tips (d)	£24.95
Amiga A600 Insider Guide	.£14.95
Amiga A120 Insider Guide	£14.95
Amiga Desktop Video Power (d)	£24.95
Using Arexx on the Amiga (d)	£29.95
AmigaDOS Reference Guide 4th ed	£19.95
The AmigaDOS Manual 3rd Edition	£21.95
Kids & The Amiga 2nd Edition	£14.95
Amiga Graphics Inside & Out	£29.95
Amiga Desktop Video 2nd Edition	£18.95
Mastering AmigaDOS 3: Reference	£21.95
Mastering Amiga AMOS	£19.95
Amiga Made Easy	£12.95
Little Red Workbench 1.3 Book	£14.95
Intuition Practical Guide	
Official Amiga Vision Handbook	£20.95
Amiga Five-0	
Amiga Gamer's Guide	
Amiga Microsoft BASIC Prog. Guide.	
AmigaDOS Ref. Guide 2nd Ed (WB1.2	
Amiga Hardware Ref. Manual 2nd Ed.	
Mastering AmigaDOS 3: Tutorial	£21.95

Mastering Amiga Beginners	£19.95
Mastering AmigaDOS 2 Vol 1 (d)	£21.95
Mastering AmigaDOS 2 Vol 2	£19.95
Mastering Amiga C (d)	£19.95
Mastering Amiga Printers (d)	£19.95
Mastering Amiga System (d)	£29.95
Amiga ROM Kernal: Libraries	£34.95
Amiga ROM Kernal: Devices	£25.95
Amiga Hardware Ref. Manual	£25.95
Amiga ROM Kernal: Includes	£34.95
Amiga Interface Style Guide	£19.95
Amiga DOS: Dabhand Guide	£14.95
Amiga BASIC: Dabhand Guide	£15.95
Get the Most from Amiga 1992 Ed	£9.95
2 Companion disks for the above	£4.00
Mastering Amiga Assembler	£24.95
Amiga Real Time 3D Graphics	£14.95
Amiga Game Makers Manual	£16.95
Computers & Chaos Amiga Ed	£14.95
Little Blue Workbench 2 Book	£14.95
Program Design Techniques	£16.95
Mastering Amiga Arexx	£21.95
Amiga World AmigaDOS 2 Companion	£22.95
AMOS In Action	£12.95
Best Amiga Tips & Secrets	£16.95
Amiga Desktop Video (Compute!)	£10.00
Visionary Programmer's Hbk (d)	£24.95
ROM Kernal Includes 2nd Ed	£15.00
11.2	

Prices include postage in U.K. Europe add £1 per book. Airmail outside Europe add 25%. Access & Visa cards accepted. Tel/Fax 0706-715028. Cheques/Postal Orders payable to DTBS. Descriptive catalogue available on request. Books normally available from stock.

SHOWROOM NOW OPEN - 413 Manchester Road, Rochdale, Lancs, OL11 3PG. Monday closed, Tuesday 10-5, Wednesday 10-1 and 6-9, Thursday 2-9, Friday 10-1, Saturday closed, 24 hour answerphone when shop closed. Phone for travel directions and to confirm opening hours.

MAIL ORDER TO:

(Dept AS), 18 Norwich Avenue, Rochdale, Lancs OL11 5JZ

AMIGA REPAIRS

Repairs undertaken to Amiga 500 computers at £44.95 inclusive of parts, labour, VAT and return postage/packing

Commodore registered for full technical support

Computers repaired in the quickest possible time

All machines will be overhauled with a full soak-test to ensure optimum reliability

Entrust your machine to the experts, full 90 day warranty

Repairs to disk drive and keyboard also included (extra charge possible if found to need complete replacement)

Repairs to other Commodore systems undertaken - phone for details

Upgrades and expansions supplied and fitted - phone for details collection service available

£44.95

To take advantage of this exceptional offer, simply send or hand deliver your computer to our workshop complex, address details below, enclosing this advertisement voucher, payment, fault description, return address, along with your daytime and evening telephone number and we will do the rest.

Should you require Group 4 Security return delivery, simply add £5.00 to the repair charge.







WTS Electronics Ltd Chaul End Lane Luton Bedfordshire LU4 8EZ Tel 0582 491949 (6 lines)

Cracking the Shell

Mark Smiddy demystifies one of the most powerful, and yet most misunderstood, features of the AmigaDOS Shell - re-direction.

e-direction: even the term is enough to make your brain itch. It describes a technique where the console window's input and output stream handles are changed to some other file handle. A file handle could be a real object on disk or another virtual terminal: AmigaDOS will not know the difference. (Actually, that is not entirely true, but I'll come back to that shortly.) It all sounds rather hair-raising, but once you get the hang of the terms it falls into place in an instant.

What it means in plain English is this. Normally you deal with AmigaDOS through a "console window" - a window which displays simple text input and output. When you type a command, you see it onscreen; when AmigaDOS "replies", you see its message on the same screen. Re-direction simply means taking input from another file rather than the keyboard, or sending AmigaDOS's output messages to another file instead of the screen. This is done by changing the file "handles", which are analogous to handles in the CB radio world – ways of identifying a file, so AmigaDOS knows which file you mean.

Now, what do we mean by a file? A file is a named object referencing

zero or more bytes on a massstorage medium - but we never describe it as such. Work you have saved from a piece of software - an AmigaDOS command - is a file. (It could be argued that even the Kickstart ROM is a file, albeit a very large one.) We use the term "file" as an analogy because the effect is similar to paperwork stored in a filing cabinet. Likewise, we arrive at the term "filing system" to describe the complex software and hardware that looks after the files.

When the operating system grants access to a file, it returns a 32-bit address known as a BPTR (BCPL pointer) to a "lock". The lock uniquely identifies the file by its device handler (say trackdisk) and its physical position on the storage medium (a sector number). Of course, you neither need nor want to be bothered with any of this. A lock is also called a "handle" - the analogy being something you can grasp hold of. The terms "lock" and "handle" can actually be used interchangeably, although "lock" is the more common term in programming circles.

LOCK PICKS

Locks are worth discussing in more depth because they are central to

BEGINNERS

If you are new to the Amiga, the very idea of AmigaDOS - an environment where you have to learn and type commands, one at a time - might seem a little daunting. Why not just stay within the comfortable confines of the Workbench and handle the tricky bits with a CLI utility like Directory Opus or SID?

There are a number of reasons, but "eclecticism" is a good one. This greasy adjective is typically used in the art world meaning to be selective. I choose it to illustrate a point: AmigaDOS is full of big, strange-sounding words that mean little until they are applied. An AmigaDOS user can be eclectic by choosing the best of several similar commands to achieve a similar goal. The SID or Workbench user must remain within the confines of the application's design - no matter how open-ended it purports to be.

Few people would disagree that many operations are more easily performed from Workbench, but very few operations can take full advantage of the machine's multi-tasking capabilities. For instance, what if you wanted to copy some files from one place to another?

BEGINNERS START HERE **BEGINNERS**

With Workbench you simply drag the respective icons from the source to the destination - from AmigaDOS you have to enter a command.

Now what if you suddenly realise you have copied the wrong icons? You have to wait until Workbench finishes, go back and delete them, and start again from scratch. This can happen when you use AmigaDOS but you can stop the command immediately - so the total time to complete the operation is much shorter. In addition, AmigaDOS allows you to select files by group much more accurately than is possible from Workbench. It also affords simpler access to a range of public domain and shareware utilities that can only be accessed from the Shell environment.

AmigaDOS is powerful and perhaps a little difficult to learn - Workbench is great for everyday tasks when you are not in a hurry. The two systems complement each other wonderfully. You can "get at" AmigaDOS by opening the Shell icon you'll find it on your Workbench disk. Even if you have never done so before, try it now - you have nothing to lose.

the process of redirection. AmigaDOS has several kinds of lock. An exclusive (write) lock grants the handling process sole access to a file: nothing else can read or modify it. A shared (read) lock is the opposite: any

number of processes can receive access to the file. Once shared access has been granted, AmigaDOS will not grant exclusive access. (Think about that for a moment, it's quite sensible.)

AmigaDOS commands create and delete locks constantly without ever bothering you. However, certain operations are not possible on locked items. For example, if a file has been opened by some application and you try to delete it, AmigaDOS will fail with the message: "not deleted: object in use". Similarly, you cannot make an assignment to a file because the lock information contains the type of object (file or directory).

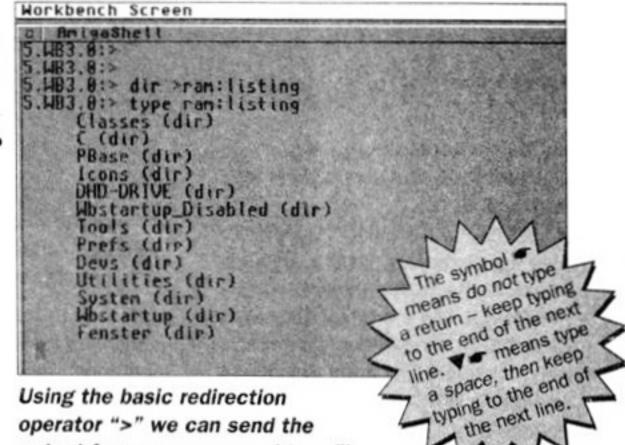
This basic knowledge of files and locks is not essential to understanding re-direction, but it helps. To summarise: files are like doors. Once a file is locked it cannot be opened; and an open file cannot be re-opened until it is closed.

INFORMATION FLOW

A transfer of information between two devices is often called a data stream because data is said to "flow" between the two places. This is quite unremarkable until you try to think of a console's input and output stream handles. How can a console (the Shell window) have handles?

As far as AmigaDOS is concerned, every console is two open files: one read, the other write.

Anything you type at the keyboard - the input stream (CIS or Console Input Stream) - is delivered to the input handle, and anything a command sends back is written to the output handle or COS (Console Output Stream). Re-direction enables the user to temporarily alter



output from any command to a file.

either or both of these streams for the duration of one command.

This might sound about as useful as a chocolate fireguard, but it is one of the most powerful features in the Shell. It enables us to send output from a command to a file, or control commands based on the result of some other operation. Three operators are used to indicate redirection:

> xyz Re-direct current output stream to XYZ.

>> xyz Append current output stream to XYZ.

< xyz Take input stream from XYZ.

The re-direction operator is followed by the name of any legitimate file (including a path) and can appear anywhere on the command line after the command itself. By convention, the operator is usually placed immediately after the command, but this is not necessary.

NEW DIRECTIONS

The most useful re-direction operator is ">" or re-direct output. When the Shell encounters this it takes the next phrase on the line and attempts to open it as a file. If the operation is successful, the command's output is sent to that file. Here's an example:

1>DIR >RAM:Listing 1>TYPE RAM: Listing

continued on page 110

G	AmigaShell
5.	AB3.8:> ECHO >T:Hello "Hello " NOLINE AB3.8:> ECHO >>T:Hello "World" AB3.8:> TYPE T:Hello
5.	llo World NB3.8:> ; re-direction using >> in append mode! NB3.8:> }

The ">>" operator is used like ">" but appends the output from a command to an existing file.

AMIGADOS

TYPE is used to view the file created by Shell – although you could use MORE or MULTIVIEW (AmigaDOS 3) just as easily.

White-space can be included between the operator and the filename thus:

1>DIR > RAM:Listing 1>TYPE RAM:Listing

but this is unnecessary. Use whichever you feel comfortable with and stick to it.

Generally speaking, re-direction files are temporary, so they would be stored in the **T**: assignment. This is generally set to the **RAM**: disk and is expected to contain only temporary files. Therefore it is good practice to use this in any lines that employ redirection:

1>DIR > T:Listing 1>TYPE T:Listing

OUTPUT RE-DIRECTION (APPEND MODE)

When output is being sent to a real file – that is, not a terminal or some other non-filing-system (disk) device – then you can make use of the append mode. This is similar to normal output, but every time a new command line is entered, the output is tagged on to the result from the last. This is similar to the JOIN command. Append mode output redirection is achieved using ">>name". Here is a tediously clichéd example, for want of a better one.

1>ECHO >T:Hello "Hello" NOLINE 1>ECHO >>T:Hello "world" 1>TYPE T:Hello Hello word

In AmigaDOS 2 and above, if the file does not currently exist it will be created for you. Be extra careful to remove such temporary files created in scripts – they will cause havoc if the script is executed more than once and the bug can be a beggar to find.

INPUT RE-DIRECTION

Re-direction of the input stream is not usually necessary from AmigaDOS 2 and above. It's been

The console device CON: can be used as a file, even with re-direction. Each "directory" is a position on-screen.

```
Morkbench Screen

5.MB3.8:> SETEMV Count 1
5.MB3.8:> FUFL SCount +1 to EMV:Count
5.MB3.8:> GETEMV Count 1
5.MB3.8:> EUFL <EMV:Count >MIL: OP=+ value2=1 to EMV:que ?
5.MB3.8:> GETEMV Count
1
5.MB3.8:> GETEMV Count
1
5.MB3.8:> GETEMV Que
2
5.MB3.8:> ; wote the original variable is not changed!
5.MB3.8:> ; we can copy it back if required for a counter...
5.MB3.8:> ; with a line like this: COPY EMV:que TO EMV:Count 5.MB3.8:> ; with a line like this: COPY EMV:que TO EMV:Count 5.MB3.8:> ;
```

Reading variables using "<" is fiddly but unfortunately it is the only option if you have Workbench 1.3.

replaced by environmental variables which are much more convenient. For instance, the following is valid in AmigaDOS 2+:

1>SETENV Count 1
1>EVAL \$Count + 1 to ENV:Count
1>GETENV Count
2

Shell expands the second line automatically, so **EVAL** reads the line thus:

1>EVAL 1 + 1 to ENV: Count

This is not possible in the earlier versions, so we have to use a trick with an input re-direction operator like this:

1>SETENV Count 1
1>EVAL <ENV:Count >NIL: V
OP=+ VALUE2=1 to ENV:qwe ?
1>GETENV qwe
2

This looks a little frightening at first because the line is so much longer – be thankful if you have a more recent version. It breaks down like this:

EVAL Is the command itself – EVAL comes from evaluate meaning to calculate an expression.

ENV:Count Means "take input from the file 'ENV:Count'." This file is automatically created in the ENV: assignment by SETENV.

>NIL: Sends output to the NIL: device. NIL: is a dummy device (described later) and this operation suppresses unneeded output.

OP=+ Describes the operator to use (addition). A keyword (**OP**) is used so

the primitive parser in 1.3 can work out where it is.

VALUE2=1 Send the value to the calculation. VALUE2 is a keyword used as above.

to ENV:qwe Tells
EVAL where to put
its result. The result
cannot be placed
directly back in the
same file it has
been taken from
because the file is

already in use
(locked) by the
Shell. If you need to
use the result in a
script loop, the
temporary file "qwe"
should be copied
over the original, like
so:
1>COPY ENV: •
qwe to ENV: Count

? This triggers EVAL into interactive mode and is the single most

important part of the command line. The query operator is usually used to get help from any command, but it also allows the parser to retrieve output from the current input stream interactively. The result of this is that **EVAL** gets the first argument from the environmental variable. **Count**.

Don't worry at all if this seems beyond you at this stage – it is a

difficult area and one which you will learn with practice.

RE-DIRECTION WITH DEVICES

I mentioned that a console window looks like a pair of open files. This means that the console device looks like two open files, so the following would seem to be true.

1>DIR >CON: Shell error: unable to open redirection file.

In late releases such as AmigaDOS
 3, this is a valid statement, but should not be used for compatibility.
 If later Shells fail to open the file the error is returned like this:

1>DIR >CO: dir: unable to open redirection file.

The console device looks like a disk drive with lots of numbered directories, each one representing a position on the screen. When it's used you should specify a "directory path" corresponding to the position, size and name of a window to open like this:

1>DIR >CON:5/10/500/199/List

You will note that the window closes as soon as the listing is completed. This is because the console "file" is closed by the Shell as soon as the command is completed. You can prevent this happening in AmigaDOS 2 and above by specifying the CLOSE and WAIT switches as part of the

path:

1>DIR >CON:5/10/500/199 - /List/CLOSE/WAIT

Other AmigaDOS devices can be used in the same way. For example, you can use re-direction to get a hard copy of all the files on a disk like this:

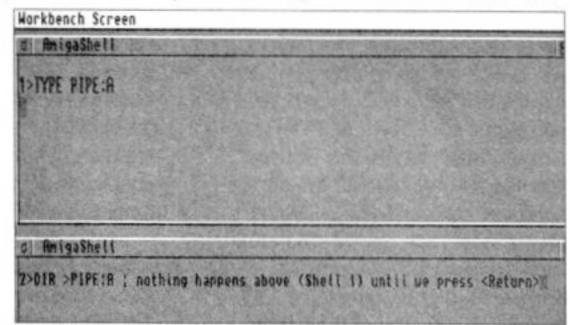
1>DIR >PRT: DF0: ALL

Possibly a more interesting example uses the **pipe** device. The **PIPE** must be "mounted" before it can be used. In version 1.3 this is a simple matter of entering:

MOUNT PIPE:

But in release 2 and higher, the PIPE's icon should be moved into the DEVS/DOSDrivers drawer and the machine re-booted.

In this example, I'll be transferring information between two



Pipes can be used effectively with re-direction – for instance, they are ideal for communicating between two Shells without a temporary file.

Shells (indicated as 1> and 2>) without using a temporary file:

1>TYPE PIPE:A 2>DIR >PIPE:A ALL

Note how **TYPE** seems to jam while it waits to receive output from the **PIPE**:.

SHUT UP!

Since any device can be used for output, it is also possible to tell a command to shut up completely by channelling its output to the dummy sponge device, **NIL:**. Consider the following example:

1>LIST >NIL:

Such fiddles do have a purpose though. For instance, you might want to suppress output from some command while it works. While many commands support a QUIET mode, a few do not. Moreover, when the QUIET switch is used, errors are still reported to the current window (*). Re-direction to NIL: fixes this one permanently. Study this example, but don't execute it unless you are about to re-boot your machine.

1>DELETE >NIL: RAM:#? ALL

o Fish disks this month

- instead, I've taken the
opportunity to look at
some of the disks sent
in by PD libraries, disk magazines
and authors of PD, shareware and
licenseware.

Speaking of licenseware, some people are against including software that's sold in this way in the PD World column - they say that in effect it's commercial software. However, personally I think that it's a perfectly reasonable way for authors to get some money from their endeavours - and an easy way for people to pay shareware fees, since in essence that's what you're doing when you buy licensware: a percentage of the sale price goes to the author. That way, they don't get as much money per program as if it were released as true shareware, but at least they're sure that every user has paid something - which, sadly, is not the case with normal shareware.

Anyway, enough of all this. Let's get down to the software!

LSD TOOLS 127

Roberta Smith DTP disk UT547 LSD Tools 127 is a fairly standard

BEGINNERS BEGINNERS START HERE

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software or "freeware" is only one branch of this area; the other main one is shareware.

Essentially, freeware may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author - it's normally around £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs - and if they don't, the Amiga scene will be a poorer place. Don't think that you're paying money for nothing, either - often hundreds or even thousands of hours of work have gone into creating a program, and it's only right that the programmer receives some reward for his or her hard work.

The third branch of software that we cover here is called

collection of utilities, encompassing some useful programs - such as ToggleClick, which turns that annoying floppy disk drive clicking off, and CKick, which loads any KickStart (for people who run, say, KickStart 2.04 most of the time, but occasionally need to use 1.3 to access a certain program). However, there are a couple of rather less useful utilities included too, like ClickHere, which puts a tiny requester on the screen with the message "click here" in it. Being an obliging sort of soul, you do - and the program quits. What a marvellous piece of programming ingenuity that is, and many thanks to LSD for including it on the disk. Very witty, I don't think.

Here's a list of the more useful things on the disk:

- SKick and CKick Load other Kickstarts
- SD Super Duper copier
- ToggleClick Turn floppy drive clicking off
- TWC Comms package
- Logicshop Create and test logic diagrams
- · Viruschecker
- · Dost SnoopDOS clone
 - Trashmaster Replacement for

BEGINNERS

licenseware. This is a form of shareware which is licensed to one (or more) PD libraries. In essence, when you buy a licenseware program you are buying shareware and paying the license fee at the same time. For this reason, you should treat any licenseware that you buy exactly as you would treat a piece of full-price commercial software – don't pass it around to your friends. You've only bought the right to use it yourself.

Can I pass other people copies?

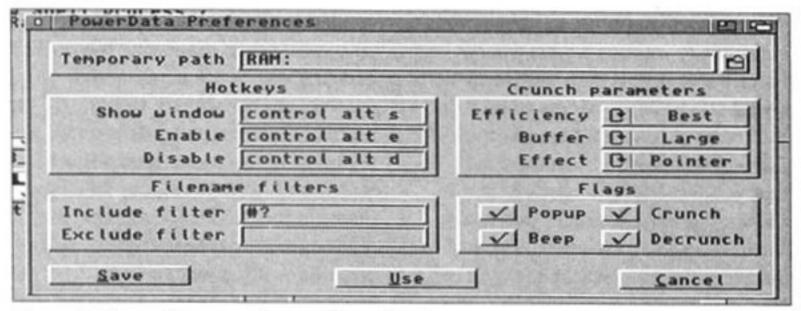
Yes – that's the way that PD reaches a wider audience. Just make sure that you have followed the author's requirements for distribution. These are normally things like not charging more than a certain amount for the disk, not altering the program, or making sure that all the original documentation is included on the disk.

You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

You should not, of course, pass on licenseware – it should be treated in the same way as registered shareware.

SOFTWARE for free

This month, it's a Fred-Fish-free zone as Ian Wrigley catches up with some home-grown low-cost and no-cost software...



PowerData enables you to use PowerPacker transparently to compress all your files – regardless of the program you created them in.

the standard Trash.

I'm not particularly keen on the fact that the disk autoboots but doesn't have a Workbench display – you have to do everything from the Shell. And since the number of commands included in the C: directory is somewhat limited – PPMore, Run, Type and the Nuke anti-virus program are all that's there – all you can do is run the programs on the disk and read their documentation. Why on Earth at least the Dir command wasn't placed on the disk is totally beyond me.

Still, I guess this is a reasonable collection of utilities. And since Roberta Smith DTP only charges 90p per disk plus 50p post and packing, you may well decide that it's worth getting.

Value for money 7/10

POWERDATA

Round about Amiga Shopper 25, I looked at a program called

PowerData, which would have been great had it worked. Well, now it does – the author, Michael Berg, has upgraded it to fix the bugs (which were apparently due to a feature of WorkBench 2.1 that wasn't implemented in earlier versions of WorkBench).

Quite simply, the program transparently adds compression – using the popular cruncher PowerPacker – to any program, with no user interference required. So when you save a file, it will automatically be compressed for you, whether you're in Protext, DPaint III or whatever. Open a file and it will be decrunched before the program attempts to read it.

This is an excellent idea, and one that's been popular on computers like the Mac for some time. It can drastically reduce the amount of space that files take up on your hard disk, and is ideal for anyone feeling the pinch of limited

RATING THE PROGRAMS

Just to be awkward, I rate the software that I review in two different ways, depending on what it is. Disk magazines, collections of clip art and the like are given a "value for money" rating, since you're essentially paying for one thing, or group of things, on the disk.

Single programs which appear in a collection of others, or programs which I've downloaded from bulletin boards, are given a "program rating", which reflects how good I think they are, taking into account usability, bug-proofness, my own particular (or should that be peculiar?) tastes and so on. Both ratings are out of a maximum possible 10.

storage space.

You control the program via an easy-to-use Preferences requester, where you have a surprisingly large range of options. For instance, you can choose to compress or not compress files depending on their names - not attempting to further compress archives created with a program like LhA, for example - and set the level of compression depending on whether speed or file size is more important to you.

The only problem with PowerData isn't really the program's fault at all. It's so easy to use (once it's set up, you don't have to do anything else with it at any time) that you tend to forget it's installed on your Amiga. And since it makes sense to have the program work on all files (even icons), pretty soon almost the entire contents of your hard drive will be PowerPacked. But then when you give disks to other people, they'll find that they are unreadable until they've been decompressed - something that you'd probably forgotten all about. The easy solution, of course, is to let your friends have copies of the program too - and that way it will soon propagate throughout the whole Amiga world.

PowerData is shareware; it displays a requester each time it's started, and will quit after 20 minutes of use. But the shareware fee is only \$10, and it's so useful that I encourage everyone to check it out and then register. With luck, this will become one of the most popular Amiga shareware programs around!

Program rating 10/10

COMMUNICATE

Your Choice PD

Communicate is a PD program written in compiled AMOS by John Cassar. It's intended as an educational program for anyone who needs (or wants) to learn any of a range of "languages": two-handed sign alphabet, one-handed sign alphabet, deaf-blind sign alphabet, Braille, semaphore, "flags" (ship signalling flags), Morse code and a "Naughts (sic) and Crosses" code. There is also a font on the disk for the Naughts and Crosses code, if you have a burning need to word process in such a manner.

The program itself is impressive, and includes well-drawn images of the flags, hands and so on. You can be tested by the program, can get it

to show you any given letter in the language, and can even enter a sentence and have it display the signals, symbols or whatever for that sentence. This is where the graphics really do look slick: for letters such as "H" in the two-handed sign alphabet, for example, where one hand slides across the other, the gesture is actually animated excellent. (The usual problem with AMOS programs, unfortunately, means that I can't screengrab the program, and you couldn't see the animation anyway, so you'll have to take my word for it...)

If you have any desire to learn sign language or semaphore, I highly recommend that you get hold of a copy of this program. I tend to think that Morse code is better learned using a program which signals to you, rather than displaying the dots and dashes on the screen, and indeed Braille teachers would probably recommend that you use a textbook where the characters are embossed rather than just looking at them on the monitor. However, this remains an excellent program, and one well worth checking out.

Program rating 9/10

EDWORD PROFESSIONAL v4.0

EdWord has been around for some time - version 2.2 was released

enough memory to do that), and you can copy and paste between them. There's even a split screen option, so that you can view two documents at the same time - and the amount of the screen that each document has can be altered by clicking and dragging on the split marker. This is something that I haven't seen in any other text editor on the Amiga, and it's a feature that's incredibly useful.

- Macros. This seems to be a requirement in Amiga text processors these days, and EdWord's is just as good as any other's.
- · PowerPacker support. The program will optionally decrunch any files which have been compressed with PowerPacker before it attempts to read them in. Of course, if you have PowerData then you won't need this feature...
- · A "text casing" feature. Specific keywords can be forced to a specified case - for example, all BASIC keywords can be forced to capitals, regardless of how you originally typed them. This requires a configuration file listing those keywords, and a couple are supplied with the program.
- · An ASCII table of characters. along with ASCII codes, so that you can insert any character into the document just by clicking on it.
- A built-in RAM virus checker.
- · An auto-save feature.



EdWord has always been good, if not quite a word processor, and the new Professional version is a rather fine text editor - well worth checking out.

about a year and a half ago, and was featured on an Amiga Shopper cover disk (the one with issue 25 - if you want to order that, see page 106). Now version 4.0 of this great £10 shareware program is out - and it's well worth getting hold of if you need a text editor.

The list of features is huge, but here are some of the more impressive ones:

 Multiple documents. Up to 15 documents can be edited at a time (assuming, of course, that you've got Add to this things like one of the fastest word counters I've come across, "live" scrolling as you drag the scroll bar around, and many more equally impressive features, and EdWord Professional becomes almost mandatory if you need a text processor. My only complaint is that the unregistered version produces a requester every three minutes or so, reminding you that you haven't paid your shareware fee - but since the cost is only £10, and includes things like over 160K-worth of AmigaGuideformat documentation, I'm sure that any users will soon register anyway.

EdWord Professional is well worth investigating if you need a text processor. And if the author added a couple of things like automatic wordwrapping, it would make a damn fine word processor too. Check it out. Program rating 10/10

PAY ADVICE ANALYSER

Virus Free PD disk 3127

This is a £5 shareware program by Richard Smedley, written after a friend was complaining to him that it was hard work keeping track of his weekly payslips. In essence, the program is a basic database, but one that's been customised for just the one task: recording payslip details for easy perusal.

The data fields are pretty simple, and should cover most of the things that you'll find on a standard payslip: things like basic pay, extra pay, PAYE, National Insurance contribution details and so on. The program automatically calculates the totals and your net pay, giving you a quick check that the details on the payslip are correct. Once you've entered the details, you can save the file with a password, to prevent anyone else seeing just how much money you make.

The demo version of the program has two features disabled: Send to printer, which, as you'd imagine, prints out the whole list; and Put into Date Order, which will order your entries chronologically - very useful if you've entered a whole slew of payslips into the program for the first time regardless of order. Because these two features are pretty much essential, anyone using the program is bound to pay up the shareware fee, but personally I don't like programs with features disabled - it seems to me that this goes against the "honour" concept of shareware, though I suppose you do still get to test whether you like the program. Still, each programmer to his own, and I'm sure that some people will find this program useful. However, do remember that, as Richard says in the documentation, you must still keep all your payslips at least until the end of the financial year even if you use the program to record all the details - a computer record won't be any use in case of a dispute. And, of Pay Advice Analyser (C) RICHARD SMEDLEY 1992-1993

	Pay Advice Analyser V1 Created By ROBERT HA Designed & Programmed By RICH
7 - 4 - 6 - 6 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	Name: Fred Bloggs Clock: 182 Employer: Acne Co. 123 Some Street, Anvtoun, A99
	Period Basic Extra Total PRYE NICS ending Pay Pay gross PRYE (In)

If you've written - or discovered - any PD, shareware or licenseware that you think should be reviewed in these pages, or if you've got any other comments or suggestions, write to Ian Wrigley c/o Amiga Shopper, 30 Monmouth Street, Bath BA1 2BW. Alternatively, you can contact lan on cix as 'iwrigley', or on the internet as 'ian@vampire.demon.co.uk'.

ART SHEDLEY Department: Shipping 9 988 13/13/33 35

Pay Advice Analyser: no more ferreting around in the bottom drawer for your payslips when the Internal Revenue invite you round for a nice "desk audit"...



CUT, TICK & POST

TELEPHONE 0702 466933 FAX 0702 617123 PD SOFT 1 BRYANT AVE, SOUTHEND-ON-SEA, ESSEX, SS1 2YD

Adjutant Agaic Albatross Riexandria William americanancial elating Andrareda GARILLAN Andre Architect

Caligula Comberic Consith CascadeLight CarawayBold # . 00 . ChilliPerre 高層量整理高層圖層層 artiful Casionlight aslon Openfare ChiTown & KSTER Cartoon CAVEMAN Chancery Charlie Chan

☐ PD-Soft Font Disk 07 Delegate DIGITALROMAN Dubiel Halic DINER DINERFAT DINEROBESE Dubiel DEUSEX Dorovar Dorovar talic Dragonnick White Drafter Light DUPLYHEAVY DUPLYLIGHT DUPLYREGULAR 00*888 WOLLMING

□ PD-Soft Font Disk 10 1998 139 Fundhank Fundhunk Halir Fusion Bold Fusion FuicruBold Futura FuturaBold Futuralitin Pateri Gardeling Galledis Gordon Garton Genoaltalic Chimonda GL20167 Chasispibable west states GothlcShadow

IRONWOOD ISADORACAPS Jacksonville 曼尼曼曼曼曼曼国教教教教 对外以外 JUNIPERTHIN 7625788 Kaufmann Thin KASTELLAROPENFACE Kathlita

□PD-Soft Font Disk 13

☐ PD-Soft Font Disk 16 MacHumaine Mandalane MANZANITA Maraige Markerfelt Thin Markerfelt Wide MathMajor MAZAWA McGarey MEDICI Medusa MESOZOICGOTHIC MicroTiempo MENDISOLAY MiamiNights MicroSerif

☐ PD-Soft Font Disk 19 OswaldBlack OswaldGrey PalatinoBold Paltino Paradox Light Porision PARISMETRO Pask-Haven PEIGNOTLIGHT PHORNIX PIGNOSE PixelScreen Pixie PoloSemiScript

PD-Soft Font Disk 22 SHOHLFOLD LENITES SHOWBOAT SHRAPHEL Silicon Brates SLAN SURFACE STAITH Stogan Ethelic SNOKOHETTALIG SNYDERSPEED

☐ PD-Soft Font Disk 25 UNCIAOS University Roman Utopia Bold Italic UtopiaBold Utopialtalic UMER WEST SIDE Upsilon Large EndSolv VAGRounded Venus VICTORIASSICTES VICEO WALROD Weiss Weiss

☐ PD-Soft Font Disk 26 Western WHATAHELLEF WHARMBY WindsorDemi Yamato WOODCUT TALETKI Zephyr Script 圣法定常法数

☐ PD-Soft Font Disk 02

Arctic2 driston Ashan souther Aylon AvantGarde Baskerville BoshousBold Soutouslight BouhousThin BeekerlMedium BEDROCKLIGHT DEE/WAX BEFFLE BenguiatBold BenguiatLight belibetten Benjamin BENYANNOADS

☐ PD-Soft Font Disk 05 C. C. Cloister Cochin Columbus Crillee COMARO CRACKLINGFIRE CSSJEESET CooperHighLight COTTONWOOD laystramilythy COBack Cunieform CSDCAdk

☐ PD-Soft Font Disk 08 TRUE FOOACAPS ENTINGAM EIRE ElbjorgScript ElGarrett ELIZABETHANN ริเมจจด ENGRAVERLIGHT ErasBlack EstroFont Eurostile Faktos FAROUHARSONFREE

☐ PD-Soft Font Disk 11 Book in Florers Goody Hundred Goudy Medieval GOUDYTWENTY Graphic Light which and Grountian GROENING Handwiting Harlos Harquil Harrington

☐ PD-Soft Font Disk 14 Arctic2 driston Asian solution Asian AvantGarde Baskerville BorhousBold Bouhouslight BouhousThin Beckerf?)edium BEDPOCKLIGHT DEE/WAR BEFFLE BenguiatBold BenguiatLight BellBetten Benjamin JENATHYCAPS

☐ PD-Soft Font Disk 17 0000 >>+00 Hymrad Navert NE(18 NewBaskerville NewBold NewGATETT

☐ PD-Soft Font Disk 20 PlayBill PostAntiqaLight PostAntiquaRoman POSTCRYPT Present Script MAMAMAMAM Psychodelic Smoke 2000100 -alliteurs Rans of Note Rechtman Script 1000 Revoed RevoeThin

☐ PD-Soft Font Disk 23 Souvenir Squire STARBURST Style STEELPLATE STENCIL Styrnie Toth STRONGMAN 3 3 13 3 3 Sydney STRONGMAN BOLD Toothood Tempus TEJARATCHI Tekton Tempo Tempoltalic

☐PD-Soft Font Disk 03

BRIBDARD BINER BIZARRO BACCAROL BlackForcest RI ADES Blippolleary Bobacious Redily Bold

BorzoiReaderBoldBorzoiReaderItalic BorzoiReaderPlain: : '::: 'BUBBLE hitalarelight bibalarelletian BurlObli Cairo

☐ PD-Soft Font Disk 06 EMBERTHISTING I COO TO BE BE # ma (M) = 7 - 1 Daytona Debussy DEVANDEA Dickens Bold Dickens Deigollight

☐ PD-Soft Font Disk 09 Rette Fraktur Flemish Flemishkalic FloraBold FLINTSTONE Fremont FlorenceLight FexScript Flora FranklinGothicBold FranklinGothicLight FrankTimes FunkSoupe FrizQuadrataBold FoxTROT FrizQuadrataThin

Earting & HEADHUNTER טצרבצ Natural Residence Heisetica HelveticaOblique Harmosa HOLTZSCHUE BORSBEADS Hot hot Houters Howardfat HowardThin ICLOOLASEN INKabad

☐ PD-Soft Font Disk 12

☐ PD-Soft Font Disk 15 BRIBDARD BINER BIZARRO BACCAROL BlackForcest BLADES Blippolicary Bodacious Bodily Bold

BorzoiReaderBoldBorzoiReaderItalic BorzoikeaderPlain: : '::: 'BUBBLE Intellerciati Intellerian Burlobli Gairo

☐ PD-Soft Font Disk 18 Middleton Mira Mistal MonotonyBook NewCentury NewsGothic NewsGothicBold azabec 300 . Illand VIPCB " TixonthChina Mardic NovareseBK Olympia Novarese BK Italic Capital Script Old English CLAN X6 ELEC 610861 TORS OK NAKO OreganDry OreganWet Orleans

☐ PD-Soft Font Disk 21 TKTOLNIAT FHYOM IT Dickard Munay Romade Rickshow RUCKMAKER Roissy HITHMAN RoissyBold RoostHeavy ROUNDEDRELES Rudelsberg Sailon Baint Francis SALVER SonsSerif SAMATTAPS Schwartwald THE HE THE THE THE SHARE SEA SALES OF THE PERSON

☐ PD-Soft Font Disk 24 TENTER LAND Tiffany Thin Chain TiffantHeavy TimesLefty Thotopetto HOMEN TOREARDOERS Toulouselautree TOYBLOCK COMMON TRIBECA MXRMDQXITyme ILetiBolic UMBRATHIN ULT CBL L ME UltraBlack

PD-Soft Presents: Just Pure Fonts

The NEW Font collection. There are 26 disks within this set in two formats Adobe Type 1 or Scalable. Adobe Fonts Work have been test on Final Copy IIb, Page Stream V2.1+ and the Scalable Fonts have been tested on Pro Page v3.0, Scala, Page Setter v3.0, Workbench v2.0 and Workbench v3.0. Both types will work with loads of other Amiga packages that can take the font formats. Please State AD " for Adobe Type 1 and SC " for Scalable Fonts. Prices are £3.00 Per Disk or £49.99 for a complete 26 disk set (ie 26 Adobe Type 1 fonts or all 26 Scalable fonts. Ring, Fax or SAE for a Full sized Font Update.

☐ Adobe Type 1 Fonts **ORDERING BY POST**

Please tick the boxes to the left of the disk. You can now collect any disks at our office numbers with a pen or just outline/ Hilight the address 6-8 Durham Road, Southenddisks wanted. After selecting your order On-Sea, ESSEX, SS1 2YD please fill in your Personal details on the order OVERSEA'S O form provided.

CUT OUT or Photocopy this advert and Post of disks please add 20% for Airmail postage. to the Address above. Hand written orders are Eurocheques are acepted. Cheques must acepted. Cheques & Postal orders make bedrawn on U.K. Banks. No postal orders. payable to: PD-SOFT. If you have ordered UPS Servive for 2 day delivery please fax or before please tick the Account box or fill in ring for details. your number number from the delivery noteis!

☐ Scalable Fonts COLLECTING DISKS

OVERSEA'S ORDERS When ordering there is a min order of 5

PC TASK (FULL VERSION)

enhancements

(£44.99 + £1.00 P&P) The famous PC software based emulator for all Amigas from Chris Hames now is in stock direct from us here at PDSoft.

them, including Noisetracker and MED modules. This disc contains hundreds of A1200 £4.99 LC10 LC24/10 DISK LABELS 3p Each / Min_50 or ☐ I£11.99 for 1000. Which Includes P&P The Aminet CDROM is in ISO-9960 format, so you can read this disc from nearly DISK BOXES - 40 £5.49 - 80 £8.99

CATALOGUE 1Mb 2Mb+

replacement but contains excellent utilities like. PUBLIC DOMAIN AND SHAREWARE A+ V298 NORTHC v1.3 Complete Clanguage

contains instructions on how to install them. Theres

4 V489 AMIBASE PRO v2.0 This is most

popular PO Database program.

A+ V490 MESSY SID v2.0 Reads MS-Dos

disks, Transfer any text files to & from an IBM PC, ie

U *+ VS23 DICE C COMPILER (2) Matthew

Dillons full featured powerful C compiler &

- + V662 DCOPY v3.1 PRO You can select the

speed of the disk drive, Copy modes, Dos. Nibcopy,

□ ^+ V678 DRAW MAP v4.1 You can generate world maps in detail views. 3d or 2d □ 2Mb (2) or

Astrology program on the Amiga

^+ V686 MULTIDOS v1.12 After this program

has been installed your Amiga drives can then read

A* V690 WB 2/3 UTILITES Contains the

programs that should have been with WB 2.x Take

full advantage of the many NEW capabilities that are

Q ^+ V710 AREXX TUTORIAL Includes several

samples of Arexx scripts & some sample programs.

ARexx comes free on all WB v2 x and better machines.

A+ V711 UNIX Contains a working demo of

Minix a Unix based System which is call campatable.

☐ ^+ V719 FREECOPY v1.8 Removes protected

games copy protection so that the user can install

needed to program in Pascal. Includes a68k 68000

4 V787 PROGRAMMER TOOLS God Tools to

design your user interface to your own programs using all of Amiga DOS 2.0+s new features. Reg Tools.

1 ^+ V790 ANIMATIONUTLS includes CyroUtils

for splitting, combining, and creating animations

- + V791 DIRECTORY ULTS Highly rec-

ammended programs which are design-ed to make

- V794 GRINDER Complete graphic

conversion package that supports GIF, JPeg. Atari SI

Neochrome / Degasl, PCX, Targa, TIFF, Ham-E and

4 Y799 ADVENCED UTILs SerNet & ParNet

Connect 2 Amigas & share resou-rces via serial or

U ^+ V811 ELECTROCAD v1.42 & PRO TOYPER

Electronics drawing Programs.

A+ V812 CANON This disk contains Printer

Drivers & Canon Studio, Gives better print output for

U !- V817 A500 PLUS EMULATOR As it sounds

will let v1.3 / v1.2 owners run WB v2.x+ software

WITH-OUT any need to purchase the W8 v2 x chips.

A+ V818 INSCRIPT v1.1 Produce video titles.

program that features, multi-drive support, ful backup, compression.

- + V841 MODULA-2 Contains modula-2

- V842 SIDv2.01 Sid can be used for various

operations, like file copieng, re-naming, deleting,

- * V858 MUSIC MAKERS A selection of

programs to produce your own music productions. Make your own music.

1 ^+ V866 MANDEL EXPLORER (2) This is the

best collection of Fractal Generating software utilities

^+ V869 ANIMATION ASST (2) Will solve

disks at the present time. Has a Word Processor

4 V936 LETTERS & BOILERPLATE Letters for

you to use as your own or cut & paste

^+ V942 SCREEN BLANKERS A disk packed

with screen blankers. Includes the Twilight Zone

colourful program that makes pictures from a

4 V945 PROPAGE 3 ENHANCER Over 40

Genies for use with ProPage 3.0, including useful ones like Make Pie Chart. Also structured clipart for borders!

4 V946 SYSTEM OPTIMIZER KCommodity

gives you memory meters. REorg will optimize hard

7 floppy disks for big speed increase. HDMem virtual memory. 2 Meg of HD space for 2Mb

A+ V947 GNUPLOT is a command driven

interactive function plotter. Creates stunning plot/

v6.0 Contains all the popular BMs like

4 V949 TESTS Contains all of the classic speed

tests and system checks we could find. Includes CPU

4 V951 PROTECTION is a collection of utilities

aimed to protect your data and protect autobooting HDs

& Document File. Lock your data files with a password

U ^+ V952 x-BENCH v1.0 (2) Complete solution

to the replacement Workbench. Contains LastHope,

4 V959 AMIGA E v2.1b Specific compiler.

is a powerful and flexible procedural programming

language
V962 SUPER KILLERS v3.0 (2) The latest

Virus Killers like BootX v5.23b, Virus Checker v6.31

A+ V979 NCOMM v3.0 Is a comm-unications

program based on Comm v1.34 with lots of very nice

A* V980 KICK v1.3 Will down grade A500+

A600, A1200 users machines to run software that would

A+ V984 PROTRACKER v3.0a The latest

updated version from Norway, Various bugs fixed

- ^+ V988 ZIPSENCHv4.0 Another Workbench

NOT normally work. Turns them into a Workbench 1.3.

View, Virus Checker, Power packer & DCopy2

Speed, A full featured system diagnostic tool & more.

*+ V948 INTUITION BASED BENCH-MARKS

graphs of mathematical functions. Requires HD

Sieve, Dhrystone, Savage, Math & Matri

mathematical formula. Now with AGA support

about 90 drivers

environment system

☐ 1Mb V263 (1 disk)

Ver & safecopy

them on HD

40 chapters (5)

C but some in basic

from IFF picture files.

IFF Format pics.

CU tasks virtually obsolete.

Parallel ports. MyMenu

interface to extra devices

from a defective disk

Maving, Formatting ect

Players, DA, AnimTools

powerpacker v2.2a, powerplayer, SysInfo, VirusX, Archiver, b-Base, Bootintro, Fist Aid Bax (2) 4 V994 THE MONEY PROGRAM VI.5 Features include upto a maxium of 60 accounts. upto 50 direct paymenys 4 V366 600 BUSINESS LETTERS Over 600

A+ V1000 GRAPHPRO v1.0 Written with Amos pro by David Jordan. Basically takes a set of data, 1 14 V390 DESK TOP PUBLISHING Extra plots them on a graph features, Text & Graphics Editors

^+ V444 PRINTER DRIVER DISK III Now

3 ^+ V1001 VMORPH v2.21 Will allow you to create smooth morphs/warps bet-ween two different images over a period of frames to create

A+ V1002 RAMOS PRO v1.12 fyou have Amos Pro then this disk will make your programs Boot without the progra

" V1003 NECKPREFS is an enhance-ment to WB 2/3 which adds 3 new prefer-ences WBPicture. BuzyPionter & Floppy

" NOOS (AGA) UTLS Contains the fist batch of A1200 and A4000/030/040 Utility programs A+ V1009 TURBO TEXT v1.1 Excellent Word Processor. Very impressiveversion

4 V1013 POOLS PREDICTION Ahelping hand A+ V1016 OCTAMED v2.0 Music editor which was designed for making music

A* VIO17 POST VI.86 An excellent Postscript interpreter for the Amiga which implements the full Adobe language (3)

A^ VIO21 (AGA) SCREENS Enhance your

Workbench disks backgrounds with theses nice full coloured pictures

4 VIO22 LITTLE TRAVELLER VI.1 Shows of world map & you can select any country for travel information, Zooms up another close up map with Q^+ V1023 QUIZ Contains Questions &

Answers with the option to add V1024 (AGA) MANDELSQUARE V1.6 Generate enhanced AGA set images, requires

numerical coprocessor. You can create 256 colour A* V1025 TERM v3.4 Comm proroom, Xpr transfer, flietype ident after download, cut & paste, point-and-click, auto upload/download, VT102/

the largest collection of utilities, documents & VT220, Ansi emulation, powerfull phone book & examples for C, It consists of six manuals, with over - + V1035 FES BASIC Just in time for all the new - + V761 A-GENE v4.18 The most popular machines which do not have Basic with thier

machines any more. AA VIOST (AGA) A1200 WB HACKS AN programs to help in your develop-ment efforts (most excellent collection of Utilities & Hocks A+ VIO38 AMOS PRO UPDATER v2.0 1st - + V784 AREXX (2) disks which contain Arexx Update to the Amos Professional programs & examples

^+ V786 PASCALThis disk contains everything

to install your A1200 HD then you need this. Also requires disk V1075 - V1040 bBASEIII v1.3 An easy to use versalite, yet full featured database. Greatly

A V1039 (AGA) WB3.0 INSTALL If you need

enhanced successor to bBASE II. 4 VIO41 DIGITAIL BREADBOARD Ful featured digitail circuit simulator " V1043 SUPER DARK v1.5 A screen blanker

like After dark from the MAC 4+ V1044 FANCY PRINTING Banner, Graph Paper vl. 2 and Disk Print v3.59 ^+ V1045 uDRAW v1.0 Provides a mechanism

for the rabid drawing of schematic diagrams. Bitmap 4+ VIO46 THE XI RAVE SAMPLES Grarett Watt's IFF 808 State samples 1 14 V1051 EASY CALC VI.0 A spread sheet

designed to be both easy to use and fast. Built in excellent help system A+ V1054 ADVANCED UTLS 2 Compress Disk doubles the capacity of your D on the fly with

compressions Also DiskOptimizer, SCSI Mount VIOSS PARBENCH All the software you need to hookup 2 Amiga's or CDTV's.

A+ V1056 DEVELOPER Contains the official

Commodore developers Kit for the Amiga Guide & 4 V1057 EDPLAYER Music MOD player that

IFF Pictures as back grounds

A+ V820 B8865 v5.9 Baud Bandit bulletin looks, acts & plays like a CD U ^+ VIOSE 3D GRAPHICS Several 3d Board System Flures include up to 99 file libraries. moddeling/ray tracing programs

A+ V1059 GRAPHICS Create stunning A* V822 BACKUP v2.43 A Hard disk backup

graphical images. MPath creates swirling galaxy mages. Roses, Rayshade 1 ^+ V1060 CIRCUIT BOARD DESIGN Includes - + V827 REPAIR-IT 2: NewZap v3.3, Sector mCAD v1.26 and several terrific routines for the

> 1 ^+ V1061 DISK UTLS Several highly recommended programs for performing file hard drive backup, file recovery, disk track recovery, and

> A+ V1062 DESKTOP PUBTransfers Macintosh screen fonts. AFM metric files to Amiga fonts/PPage

U ^+ VIO63 RIPPERS, STRIPPERS & BEATS For the music enthusiast, design-ed to strip music from 4 VIO67 3D OBJECTS 3 About 20 objects in Sculpt / Turbosilver format

many of your animation problems. Includes ABridge, 1 ^+ V1069 PRINTER DRIVERS 5 Desk-jet 550c 500, 500c, Ricoh HP1200, Canon BJ300, 130, LPB. 2 4+ V888 TRONI CAD VI.0 The best CAD 10e, PJ1080a HP Paintjet AA VIO70 (AGA) UTLs 2 256 colour icon editor, Plamsa 256, Quick Grab v1.1

U ^^ V1071 (AGA) MSM v1.8 Martins system AA V1072 (AGA) WINBLENDER v39.28 Create

excellent/stunning AGA fractals. Also contains 68030/040/FPU versions A+ V1073 FT-XACCOUNTSv2.01 Was written

as there are not ready any other good packages. AA V1074 (AGA) UTLs 3 Collection of AGA Based utilities. Includes Kill AGA Which allows you to run old badly written programs incluing demos & some games VIOTT GENEALOGIST V3.04 Is a specialized database for keeping track of genealogical information. Full featured & a wide selection of features to use

U ^+ V1078 PC TASK v2.03 Software IBM-PC emulator. It allows you to run the majority of PC software with no additional hardware. Now supports VGA, EGA, CGA and MDA. Full version £49.99 see below 4 V1079 KEYBOARD TRAINER v1.1 Best Public Domain Typing Tutor

4 V1081 REPAIR-IT 3 Contains a selection of Disk, Hard Drive repairing and file saving utilities 2 ^+ V1083 CROSS v5.1 is a program that creates crossword puzzles for you U ^+ V1084 SPECTRUM EMULATOR v1.7(2) This

is the best & latest version of the most popular emulator for the Amiga. There is an 020/030 versions now on the disk which enhance the games A+ V1087 STOCK ANALYST Technical analysis and securities tracking program which calculate when to buy & sell shares

A* V1088 WB 2.0+ UTLS Contains Chicfrog. DFC5, FastDos, Formatter, No-Click, UnDelete, KeyMac, MegaWB, MR, 1 Plane, OpenL ResumeMaker & StarBlank.

U ^^ VI090 ANDYS (AGA) UTLs Another selection of utilities for A1200 owners also encludes FakeMern, KillAGA, AGATest, Degrader and more. 4 VIO91 ASTRONOMY v2.0 A menu driven astronomy program that cal-culatoes information about the Sun, Moon, Planets and Constellations. V1092 HEROQUEST AID Will aid solo AD&D players who do not have a Dungeon master at the present time. It takes over the DMs role.

4+ VIO93 PARNET SET-UP (2) A two way network file system between two parallel ports,

establish via two amigas

A* V1095 DEGRADERS If you have trouble running software on an A1200 or A4000/030/040 give this disk a try it will emulate the basic 1.3 rom better that any other software on the Amiga

A+ V1096 MING SHU CHINESE ASTROLOGY Will create a horoscope in seconds not hours, the

4 VIO97 TITANIC CHEATS v1.40 Contains 950k of raw data which is just a whisker under 600

games Well presented

A+ V1101 RJ UTLs This disk contains helpfu image processing and painting programs. Like Perfect Paint vl.34, Image Workshop vl.3, an IFF

V1102 DT UTLs Contains Border for WB v2.04+ machines, MakeKickFile, SKick v3.34, is a replacement for kick-it, Z Kick and LKick kickers. It A+ VIIO3 TEK-ATAK MODULES An excellent helping of wonderful music for your own productions

V1104 COLOURED ICONS Transfer your disks into colouful well presented works of art with this database

A+ V1105 VIEW TOOLS Contains Convert ViewTree, a Familt tree easy to use database progra ViewPhone, an Britsh telephone storage database ViewDisk, is a small disk catalogue utility. - V1106 MAJOR LEAGUE Allows you to keep

track of your favorite teams and there results. 1 14 VIII4 PRINT LABELS DocDump2.1 Envelope Print v1.2, Inlay Maker v1.4, MC maste v1.1, Banner Press, Label Print v3.5

4 V1124 FIRST ALERT VIRUS BOOTX, EVN v2.22, LVD v1.75, MVK v2.2, No Saddam, SnapShot VC, Virus X, Virus Z A+ V1125 LEMMINGS 2 INSTALL This disk will

install Lemmings 2 to your hard drive. 1Mb Chip RAM + 512k RAM 2 ^+ VII33 NUMPAD v37.3 Emulates

numeric keypad on some Amiga Keys. A* VII34 TOOLMANAGER v2.1 (2) Includes the ability to add menus to your Tools menu, add WB icons or Windows

" V1136 DISK UTLs 2 Copy_C A tool for making backup copies, formatting ect. DiskMate A multi drivedisk copier. Disk Salv 2 Disk repair, salvage & undelete utl. HDClick, HD menu & workbench tool.

DAA VII37 (AGA) UTLs 4 Test, B8lank CheckAGA, CycletoMenu, Doublex, Force VGA, GIF Datatype, PKLudge, PPShow, Rend24, ViewTek &

An VII38 (AGA) UTLs 5 Degrader, Pav-Ray, AmigaToDouble, CardMemLast, Palette, Promotor,

V1139 (AGA) UTLs 6 A4091Patch, Alert limer, Bestid, Clouds, Ham8 JPEG, NewPOP, NTSC4NTSC, PatchPointer, Plasma PCX & Screen 4 VI140 FOOTBALL FORECAST The latest

and most upto date football results prediction pra 1 4 VII41 MANDELPLOT v2.4 Does't jui produce 2d fractals, can view them in 2d or 3d modes, make animations, even design your own fractals. Fastest mandel-brot producer " + VII44 GRAPHICS Contains files, DJPEGGui v37.1, MakeAnim7, BestAGA anim

playback S-Anim-5 v1.1, S-PIC v1.2 A+ VI145 MENUMASTER III If you want produce a simple menu system this is it wether for a hardsk or floppy disk

4+ VII47 EASYBENCH Contains a wide selection of utilities which covers almost all the best utilities on the Amiga (2)

4+ V1152 GOLDED V.94(2) A GUI Based editor with lots of functions/options (about 250), DICE compiler front end, OS3 look & functions, folding paragraphs, fully customizable menus, Hoticeys, A+ V1153 AMIGABASE v1.31 programmable database, features inclu-de 2 display methods, filter datatypes, search, print, string, memo text date, time, Data only limited by memory size. 4 V1154 MAGIC MENU V1.27 Replaces all

Intuition menus, supporting both pull-down and Pop-Up menus. Menus can be displayed in a 3d ☐ ^+ VII55 PHXASS v3.3 A complete mocro assembler which supports all important Motorola 4 V1156 VIDEO TITLER Can you generate

rofessional looking TV titles and credits for you oun videos. Well you can with this, It has outstanding abilities like very smooth scrolling, colour slides IAGA support and use of colour fonts, ideal for use with our Colour Fletcher fonts.

1 14 VIIS7 DINOWARP TRIVIA You land suddenly & apear in front of a Dinosaur who agres to let you go if you answer 50 questions 4 V1158 BACK TO SCHOOL (2) a collection

of the best Public Domain & shareware educational programs which will demostrate to the youngest kid how to learn on the computer whill having fun. U ^+ V1160 NOSTROMO CHEATS v1.1 The best adventure solution disk ever made with over 500 ☐ ^+ V1161 GOALKEEPER v1.0 Computer soccer

administration program, Create your own Mini Football leagues upto eight teams. Fit for the European, UK leagues, or just use with Kick-Off 2. 1 4 V1164 ASI A1200 FIX DISK Contains all what you would need for getting disks to work on your new a1200 computer

A+ V1174 SAMPLES UNLIMITED A selection of instruments for all music programs like OctaMED. Sound Tracker

A+ V1175 UDM v3.0 Do you want to produce a utility disk of your own, well this disk will put you on the right track V1176 NO SAMPLER UTILITIES Contains

Hunter III, Fraxion Ripper, Sample Maker, R.I.P. 4 V1177 BETTERBENCH Yes its pnother intresting Workbench utility disk packed 99% full of utilities and documents 4 V1178 KICKSTART 3 EMULATOR This disk

is a multi kickstart selection utility disk. You can select Kickstart 1.3 (34.005) Kickstart machine (as it is) Kickstart 3.0 (39.106) No AGA picture support but you do have a superior Workbench ect. - * V1179 FILE-O-FAX Designed for you to work at your own leisure without worrying about forgetting

those important meetings, or names, address, tel No's A+ V1180 BACK TO SCHOOL 3 Contains Treasure Search, ReflexTest, Type or Die, more educations programs of kids 4 VIISI COLOUR THE ALPHABET This

program is for early learners which may help with letter & colour recognition and a bit of counting too. 4 V1182 IRREGULAR VERBS This is a Quiz

game based around: subject Verbs - 4 3411 KINGDOMS AT WAR This is a 1 to 4

player Risk type game with neat and colourful A *+ 3412 THE LAST REFUGE is a Space invaider

variant set in the middle ages - ^+ 3413 DARKSTAFF is another classic game

this one from the spectrum world 4 *+ 3414 CONQUEST & DOMINATION AN excellent stratergy war game in which you can battle with troops, Tanks, Guns, Planes, Bombers, battle ships. Replace amol, oil, with trains, tankers. Build buildings, get more fuel, balance your funs, buy and sell and much more.

Prices are Per Disk

3-5 Disks £2.75 EACH 6-10 Disks £2.50 EACH 11-20 Disks £2.00 EACH 21-50 Disks £1.75 EACH Disks £1.50 EACH 51+

Font Disks (Adobe / Scalable) £3.00

£49.99 26 DISK PACK AD OR SC

POSTAGE & PACKING 50p

Just Released!

communication programs and BBS software.

CD4: Aminet CDROM (£24.99 + £1.00 P&P)

The Aminet CDROM contains thousands of Amiga programs from the Aminet nternet Archive. This disc contains nearly 600 megabytes of software. The thousands of applications include GNU programs such as the GNU ANSI C/C++ compiler, the GDB symbolic debugger, GNU Emacs, the Ghostscript previwer, and GNU Chess. There is a huge selection of sound files, and utilities to play DUST COVERS £4.49 A500 A600

Just Released!

games, including educational games, video and arcade games, strategy games, a 3.5 DISK CLEANING KIT. war games, card games, and word games. The disk contains many modem any system, including Amiga and IBM PC, BBS index files are included for ☐ MOUSE PAD. €3.49 popular MSDOS BBS's. This disc is brand new in 1993. Also contains Workbench 2 and Workbench 3.0 sections. Full of software & shareware.

DISKS (3)

£2.50

Your Name A/c No Address Post Code Telephone Card Card No Signature I enclose cheque/PO for # £ The

Collection

P.O. BOX 672 South Croydon Surrey CR2 9YS Tel: 081 657 1617

Public Domain and ShareWare fully tested, documented and virus free!

THE LEADER - OTHERS CAN ONLY FOLLOW!

The LATEST in PD and SHAREWARE!

PLUS! Free help & advice by post or telephone - anytime. * Written Help! sheets.



* Edited & Printed docs

- * YOU choose the programs. WE make you YOUR disk.
- * 1-3 disks £1.50 each. * 4 plus disks £1.25 each.

Unique 'PICK YOUR OWN PROGS' for FULL DISK VALUE

辛 FREE CLUB MEMBERSHIP 辛 INFORMATION PACK & CATALOGUE DISK only £15 * Includes INDEX & LATEST Virus Checker & FREE updates



PUBLIC DOMAIN FOR ALL AMIGAS

 300+ Workbench 2 Programs
 100 AGA Disks Available LSD Legal Utils to 143 • Fred Fish to 910 •

UTILITIES

PC Task V2.03 Spectrum Emulator 1.7 - 2 Disks CPPD Utils - 16 Disks Amos 1.36 Updates - 2 Disks The Best Virus Killers OctaMED, MED + Trackers

OTHERS

Over 100 Demos **Over 120 Different Animations** Over 1300 Music Modules

Over 500 Fonts Over 130 Games

Own Disks Assembled to Order

No Gimmicks, No Catch Phrase - Just The Best Public Domain Available

Send 2 First Class Stamps for Extensive Catalogue Disk to:

3 DUNEDIN CRESCENT . WINSHILL . BURTON UPON TRENT . STAFFORDSHIRE . DE15 OEJ . Tel: 0283 516736

wisage Computers



PUBLIC DOMAIN LIBRARY TELEPHONE (0602) 444501

All Public Domain is copied onto Branded Disks which are certified 100% error free. For a free disk catalogue, please send an SAE plus 2 1st Class stamps. Telephone orders: Mon-Sat 9am-5.30pm. Key: ()=No. of Disks. This is only a small selection from our library, we currently have over 2,500 disks in stock.

UTILITIES

Protracker V3 Virus Checker V6.3 Winblender (KS3) Disksalv V11.27 (KS2) Superduper V3.0+ (KS2) Toggleclick (KS2) Biorhythm V2.2 Resource Demo V5.12 Pools Predictor V1.1 C Manual (12) Tsmorph (KS2) Lyapunovia V1.5 BBase III V1.3 ABackup V4.01 Geneologist V3.04 Directory Works V1.62 Octamed V2.0 Fractuality Demo Agene V4.0 Spectrum Emulator V1.7 Rom Monitor V2.7 Sys Info V3.22

DISK PRICES & POSTAL RATES

No. of disks per Disk P&P 1-10 £1 £1 11 - 25£1.25 £1.50 26+

GAMES We stock the entire Assassins games collection 1-150

UTILITIES

North C (2) AmiBase V3.76 ReloKick 1.3 Golf Recorder PC Task V2.03 Text Engine R.S.I. Demo Creator V2 DCOPY 3.1 600 Business Letters Alcatraz Legal Tools Spectrapaint V3.0 F.R.A.C. Adventure Creator Magnum V1.4 (Disk Mag Creator) Messysid V2.0 Video Utilities (3) Kickstart V2 Emulator Fake Fast Memory Vmorph V2 Beta

PLEASE NOTE:

WE ALSO HAVE ALL THE LATEST DEMOS.

HOW TO ORDER

By Credit Card or By Post Please make cheques, with bankers card number or postal orders payable to:

"VISAGE COMPUTERS"

TELEPHONE (0602) 444501

ART

Clipart Pack 1 (3) Clipart Pack 2 (3) Bodyshop 4 AGA (2) Beyond Force Slide Show (2) Cryptoburners "Revelations" 3 Ways to Stop Smoking 1.5Mb Compugraphic Fonts (5) AGA Slideshow

LSD

LSD Legal Tools. The best utility packs on the Amiga, we have 1-155.

LSD - Simply the best demo packs. As the name suggests, these contain all the best intros from all the top groups. We have 1-70.

GRAPEVINE Disk Magazine by LSD

Out now Issue #18 (3 Disks)

FRED FISH

We currently have in stock Fish numbers 1 - 910

VISAGE COMPUTERS (DEPT AS) 18 STATION ROAD, ILKESTON, DERBYSHIRE DE7 5LD

A1200 ONLY

AGA TETRIS/UTILITIES (1)

ANDY'S 1200 UTILITIES (1)

including PP show V3.0a etc.

CYNOSTIC SLIDESHOW (1)

ASSASSINS FIX DISK (1)

A1200 INTROS (1)

4 great demo intros

brilliant AGA slideshow

first brilliant AGA demo

HOI AGA DEMO (1)

KLONDIKE AGA (3)

NIGHTBREED (2)

more useful utilities

VIEWTEK (1)

SUPER HAM PICS (6)

brilliant ray-traced pics

classic patience game

SLEEPLESS NIGHTS 3 (1)

UCHESS (1) (needs 4 meg)

the ultimate chess program

AGA picture/animation viewer

WB3 BACKGROUNDS (1)

game and useful utilities

great collection of utilities

SEASOFT

The Logical Choice

OctaMED Pro V5 f- £30.00

Latest 2 disk version of this famous 8 channel tracker/sequencer with a totally new look - PULL DOWN MENUS, ON-LINE HELP, FULL MIDI SUPPORT WITH UP TO 64 TRACKS, SAMPLE EDITOR, SYNTHESISED SOUND EDITOR, STANDARD TRACKER OR TRADITIONAL STAVE NOTATION DISPLAY AND LOTS MORE. (Requires Kickstart 2.04 or later).

V4 now only £18.00

AM/FM Disk based magazine for Amiga Musicians. Issue 16 now out

£2.50 (1-15 also available)

SUPERSOUND 4 Brilliant sample editor packed with many eatures and special effects.

64.99 (Manual £10.99)

A-GENE

Latest version (V4.38) of this feature packed genealogical database £15.00

CD ROMS CDPD 3 - 619.95 FF761-890. AGA pics classic books. Clip art

17 BIT - 639.95 an instant P.D. library on this brilliant 2 disk set.

ACC

(Amiga Coders Club) hints, tips, tutorials and source code for all Assembly language programmers £3.50 per issue (Issue 31 now available) V4 manual £8.50

TOTAL IRRELEVANCE

MED User Group (MUG) disk magazine Packed with news & reviews, tips & tutorials and lots, lots more - essentia reading for all MED/OctaMED users Issue 4 (2 disks) - £3.00 (issues 1- 3 £1.50 each)

CLR LICENCEWARE

TYPING TUTOR - complete course & speed tests -£3.50 A-CHORD - guitar chord tutor -£3.50 DRAGON TILES - excellent Shanghi style puzzle game

£3.50 X STITCH LITE - produce cross-stitch charts -£3.50 BIG TOP FUN - 4 circus based games -£3.50 TIME RIFT - excellent platform game -POWER ACCOUNTS - keep track of your bank account £3.50 PREHISTORIC FUN PACK - 4 dinosaur based games -

£3.50 £3.50 WHITE RABBITS - brilliant puzzle game -£3.50 POWER TEXT - word processor with spelling checker €4.50 WORD FINDER + - a must for all cross word fanatics -MY LITTLE ARTIST - kids art package - not for A500 £3.50 JUNGLE BUNGLE - KIDS ADVENTURE GAME -£3.50 FLOWCHARTER - create, print & save flow charts -£3.50 OGI - help OG the cave man rescue his family £3.50 while avoiding all those prehistoric nasties -

ALL OTHER CLR TITLES ALSO AVAILABLE

CLR ENCYCLOPEDIAS

These disk based encyclopedias cover a range of interesting topics. Using a combination of text, diagrams, drawings and photographs each title is entertaining as well as educational DINOSAURS 2 (£4.50), DINOSAURS 3 (£4.99) GEOLOGY (£4.50), FRESHWATER FISHING (£4.99) SOLAR SYSTEM 182 (£4.99each), ECOLOGY (£4.99) KINGS & QUEENS (£4.50). DISCOVERY AMERICA (£4.50)

HUMAN ANATOMY (£3.50), HOME INVENTIONS (£4.50)

Essential reading for anyone trying to come to grips with Assembly Language programming on the Amiga. Easy to follow tutorial with loads of examples that you can try with the built in Editor and Assembler. Disk 1 (PD) - £1.50

Disk 2,3 &4 £5.00 each (12.50 the set)

V4 & manual £26.00

£3.50

AM/FM

high quality samples ideal for OctaMED etc. disk 16 now out €2.50

(1-15 also available)

AMFC PRO

Converts many standard music files to OctaMED & Music-X format 610.00

TECHNOSOUND SAMPLER €29.95 **MIDI INTERFACE**

with leads £22.50

MULTIMEDIA TOOLKIT CD ROM

over 10,000 files - 24 bit & Ham 8 pics, fonts, clip art music modules & samples £19.95

12 disks packed with all you need to know about C

£12.00

AMIGA P.D. & SHAREWARE - IDEAL STOCKING FILLERS

UTILITIES

A-BASE (1) excellent database program AMIGA FOX (1) desk top publishing on a budget ASTRO 22 (1) serious astrology program ACC 1-4 (1) the best of ACC issues 1-4 AMOS PRO UPDATER (1) a must for Amos users D-COPY 3.1 (1) brilliant disk copying program EASY CALC (1) excellent spread sheet ENGINEERS KIT (1) test your Amiga INSCIPT (1) video titler KICK 1.3 (1) now you can run those original A500 programs on your Amiga KICKSTART 2 (1) emulates Kick V2 on Amiga 1.3 MESSY SID (1) Amiga PC file converter N COMM V3 (1) powerful comms package NORTH C (2) popular C complier NUMPAD (1) adds numeric keypad to A600 PC TASK V2 (Demo) (1) latest and best PC emulator SID 2 (1) comprehensive directory utility TEXT ENGINE V4.1 (1) excellent word processor

TEXT PLUS 3 (1)

real word processor/text editor

TRONICAD V1 (1)

electronic circuit designer V-MORPH (1) Packed to the brim with create smooth morphs/warps FRED FISH 1 - 910 +

C-MANUAL

programming on the Amiga

MUSIC

CHRISTMAS MUSIC (1) classic Christmas tunes DESKTOP GUIDE TO ELECTRONIC MUSIC (3) excellent tutorial (reg 2 drives) DRUM KIT (2) high quality drum samples MED V3.21 (1) classic music editor MIDI CRAFT VOL 1 (1) demo version of Music-X and Midi songs from the Craft Bros NO SAMPLER? (1) no need for a sampler with this great tutorial & util from MUG OctaMED V2 (1) fully functional 8 channel editor brilliant AGA slideshow OctaMED V5 (1) non-save demo version X BEAT PRO v1.3 (1) drum sequencer NOISEPLAYER V4 (1) module player OCTAMED MODULES Microcraft collection (4) OctaRock 3D (1) OctaStuff (1) Friends of Paula (3) **CATALOGUE DISK - 61.00** FRED FISH CATALOGUE - £1.50

coloured WB3 backdrops WINBLEND (1) AGA fractal generator

PD PRICES - PER DISK (No. of disks shown in brackets) 1-4 disks - £1.50 5-9 disks - £1.25 10-24 disks - £1.00 25+ - £0.90 Unless otherwise stated all titles work on all A500 (1 meg).

ACCESSORIES (£1.00 P&P)

A500+, A600 & A1200

MOUSE MAT 3.5° DSDD DISKS 50p A500 DUST COVER 100 DISK LABELS £1.50 3.5" X 10 DISK BOX £1.25 A600 DUST COVER A1200 DUST COVER 3.5° X 100 DISK BOX €5.99 PRINTER LEAD (1.8m) £2.99 HEAD CLEANING KIT

GAMES

AGATRON STAR TREK (2) a must for all trekies. AIRPORT (1) air traffic control sim AMOS CRICKET (1) simple but fun cricket game DONKEY KONG (1) get your golden oldies working classic arcade game **DUNGEON FLIPPER (1)** pinball game. GUSH (1) - Pipeline game RETURN TO EARTH (1) space trading game ROBOULDIX (1) brilliant boulderdash game SKID MARKS (1) very fast driving game SUITCASE (2) text/graphic adventure game 18TH HOLE GOLF (2) - golf sim ROAD TO HELL (1) (2 Meg) overhead driving game STARBASE 13 (2) excellent graphic adventure game TETRIS PRO (1) classic tetris game TOTAL WAR (1) excellent risk style board game WIBBLY WORLD GIDDY (1) commercial quality platform

LATEST ASSASSINS

AS1 138 - Galactoid, Scorched Tanks, Air Hockey AS1 139 - The Big Game, Bat Dog, Amiganoid. AS1 140 - Fatal Misison 2. Cronic The Hodge Heg. Megaworm AS 141 - Black Dawn, Reversi 2, Gold Rush AS142 - Rueda, Galaxy 92, Courtroom

CALL FOR COMPLETE LIST

£2.99

€2.99

£3.99

T BAG 1 - 77

Please add 50p P&P to all PD/Licenceware orders and £1.00 if your order includes other items. Subject to availability, all orders are dispatched within 24 hours of receipt. Send orders to:

SEASOFT COMPUTING, (Dept AF), The Business Centre, First Floor, 80 Woodlands Avenue, Rustington, West Sussex BN16 3EY. or telephone



(0903) 850378 9.30am to 7.00pm Monday to Friday (to 5.00pm Saturday)

VISA

course, there's always the danger of a hard disk crash...

Program rating 6/10

POOLS-WIZARD JUNIOR

This is an AMOS program designed to improve your chances at predicting score draws and generally winning a fortune on the pools. It's public domain, although for £10 the author will send you a more complete program (called, unsurprisingly, Pools-Wizard) which includes an improved prediction engine and one or two other extras.

I've seen a number of similar programs in the past, and I must say that this is one of the easiest to use - and, indeed, one of the best looking. Data entry is simple, and you don't need to enter the team's full name every time - handy if you start using it half-way through the season and have to enter something like "Hamilton Academicals" a dozen times. Instead, you can just enter the first portion of the name and the program will replace it with the full name. If there are two or more teams which match the first portion of the name, hit the + key and the next one will be displayed.

After you've entered the results for a few weeks, it's time to start

making predictions. Again, this is simple: enter team names and the program will tell you whether you're likely to be a millionaire at the end of the day.

At the end of the season, of course, teams will be promoted and relegated - and here you can really see how much thought has gone into the program. Teams can be moved about through divisions with simple button clicks ("relegate" and "promote", for instance), and should the powers that be decide to alter the way that points are awarded for wins, draws, losses and so on, this too is easily alterable by simply clicking on the appropriate requesters.

All in all, this is an impressive program and one that pools punters will no doubt want to try out. The only problem is that we're already well into the footy season - so entering all the results will be something of a tiresome process. Perhaps the program's author, Paul Nicholls, could think about sending out updates of league positions and results on disk for a subscription fee? Anyway, it should be available from the major PD libraries by the time you read this - Paul's sent it to most of the major ones, but

recommends Penguin PD, who only charge 90p per disk and who have already written back to say that they'll be including it in their library.

Oh, and does it work? Well, Paul says that it performs at least as well as one other popular prediction program, and better some of the time. The fact that its bigger brother (the one you get if you send him

£10) has an "improved" prediction mechanism suggests that perhaps you won't actually win that £2 million next Saturday, but it's good for interest and a laugh anyway. If you use it and you do make a fortune, do let me know!

Program rating 8/10

DISKMANAGER III

Kew=II disk U1021

Way way back, many centuries ago (well, in Amiga Shopper 20, anyway), I reviewed DiskManager 2 by Andrew Woods. And here it is in an all-new,

Pools Wizard

Pools-Wizard Junior: it's a funny old game, Saint... and so is trying to work out the dividend formulas!

improved version.

DiskManager keeps track of your floppy disks for you, by creating a database of their contents. Scanning disks is a simple process of inserting them and choosing Scan Disk from the menu (and then clicking **OK** on the annoying "you haven't registered yet" shareware requester). Once you've catalogued all your disks, you can then do a number of things with the database. For instance, you can find a specific file on any of the disks - since you can enter a title and comment for each disk, of course

DEPT AS, 43 BADGER CLOSE, MAIDENHEAD, BERKSHIRE SL6 2TE PHONE 0831-649386 ALMOST ANY TIME

FOR A CATALOGUE DISK SEND THREE 1ST CLASS STAMPS, OR FOUR 1ST CLASS STAMPS TO INCLUDE MY FISH CATALOGUE DISK FISH 1 TO 925

SMALL BUSINESS PACK only £6.00 inc P&P Six disks to help you with your finances, almost all you will ever need.

VISION & SOUND 2000 only £2.00 inc P&P Play it - hear it - see it - show it - read it . 2 disks chockablock will almost do it all.

WE STOCK THE VERY LATEST ASSASSINS **GAMES DISKS**

ANY 100 DISKS ONLY £75.00 inc postage

☐ Kickstart 2 Emulator

Grapevine 17 (3)

Game Cheats

Send to:

ANIM 1 PD PO BOX 128

WEST MALLING KENT ME19 6UA

SAME DAY DESPATCH

(+) A500+ COMPATIBLE. (A) A1200 COMPATIBLE. (AA) A1200 ONLY. (2) NO. OF DISKS. (1M) MEMORY REQUIRED.

ANIMATIONS/SLIDES ANO1 Luxor Teenager AN29 Fleet Manoeuvre AN02 Juggler Demo AN30 Lotus Car AN03 T Pot Anim AN31 Enterprise Leaves Dock AN04 Knight Anim AN32 Kuli - Star Trek AN05 Walker 2 AN33 X Wing Fighter AN06 Walker 3 AN34 F15 Jet AN35 Gotta Go Anim (1M) AN07 Ghost Pool AN08 Batman The Movie AN36 Aliens APC Anim (3)(3M) AN09 T Pot 2 Anim AN37 Space Odyssey Anim (2M) AN38 Cyclist (1M) AN10 Piano Anim

AN11 Fillet the Fish AN39 Mayhem On Wheels AN12 Real Pinball Anim AN40 Station at Khem (3)(3M) AN13 Fractal Flight AN41 Camouflage

AN14 Space Shuttle AN42 5 Ways to Kill a Mole AN15 Porky Pig AN43 Another 5 Ways AN16 Franklin the Fly AN44 Alarm Anim AN45 Bad Bird Anim

AN17 Light Cycle (2) AN18 Frog Anim AN19 Sculpt Anims 1 AN20 Sculpt Anims 2 AN21 Fractal Flight AN22 The Magician

AN23 3D Voyage AN24 Fly Past (space) AN25 Coyote 2 (11M) AN26 Coptor Anim AN27 Rodent Anim Part 1 AN28 Rodent Anim Part 2

Motorola Invaders 2 (2)(1200)

Panta Rhei (1200) ☐ French AGA Demo (1200)

 242 (needs Fast RAM) ☐ Endless Melodies (2)

Star Trek Rave Demo ☐ AGA Slides (3)(1200 only) ! ☐ Desert Dream (2) ☐ Revelations How to Skin a Cat

For catalogue send 60p (FREE with order) Make cheques with Bankers no., or Postal Orders payable to: "ANIM 1 PD"

PD DISKS:

25+

= £1.751-4 5-10 = £1.50= £1.2511-24

Please add postage: 1 to 10 disks £0.70 10+ disks £1.00

AN46 Speed Limit (3)(3M)

AN47 Road Hog (2)(2M)

AN49 Dam Busters (2M)

AN52 Buzzed (3)(2M)

AN53 Satellite's Revenge (2)(2M)

AN48 Weather Man

AN50 Bird of Prey

AN51 Landing (4)

AN54 High Flying

AN55 State of Art

AN56 Miners Anim

Europe & World add 25% to total = £1.00order

AN57 Madonna Anim AN58 Mr Potato Head AN59 Zynex 3 Anim (2) AN60 Cover Up Anim AN61 Circus Anim AN62 Last Stand on Hoth (4)(3M) AN63 Lemmings Revenge AN64 Unsporting (2M) AN65 Anti Lemmings (2)(2M) AN66 Alternative Reality AN67 Clothes Peg AN68 Dart Anim AN69 Dolphin Dreams

A1200 ONLY SLIDES

AN70 Pogo Anim (2M)

AN71 My Tin Toy

SA01 Nightbreed S/Show (2) SA02 Revelations S/Show (2) SA03 Jurassic Park S/Show (2) SA04 AGA Landscapes SA05 TV Pics (2) SA06 Cynostic S/Show SA07 Fantasy Pics SA08 Ferrari AGA SA09 Fantasy Pics SA10 Ghost S/Show (2)

SA11 Ham 8 Pics 1 SA12 Ham 8 Pics 2

SLIDES SS01 Fantasy Art 1 SS02 Fantasy Art 2 SS03 Fantasy Art 3 SS04 Fantasy Art 4 SS05 Fantasy Art 5 SS06 Robocop Slides

SS07 Tobias Richter (2) SS08 Total Recall SS09 Forgotten Reals 2 SS10 Terminator (4) SS11 NASA Slides

SS12 • Ray Trace

(#) = Number of disks 100 PD games for

Add 60p per order for P&P

Cheques/POs payable to NJH PD

Over 3000 disks available including

Utilities, Games, Fonts, Demos,

Clipart, Music and many more.

FREE DISKS

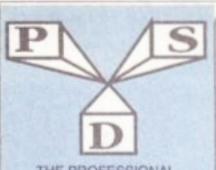
ProTracker 3.1b

☐ Med Modules (3)

☐ Drum Samples

☐ Samples (3)

☐ Gator Graphics



THE PROFESSIONAL STANDARDS FOR DIS-

UTILITIES

U1 ... Cirrors Music Creator

U35 Soundtracker Special

U38Paint, Music, Media

U41 __Red Devils Utils 4

U39Card Designer

U21The Comms Disk

U32.....Modem Utils U34Red Devils Utils 1

TEL: 0274 880066

CHRISTMAS GIVEAWAY

1. BUY 10 PD DISKS & GET A FREE 10 CAP BOX WORTH 1.99 2. BUY 15 PD DISKS & GET A FREE MOUSE HOUSE WORTH 2.50 3. BUY 20 PD DISKS & GET A FREE MOUSE MAT WORTH 2.99 4. BUY 25 PD DISKS & GET A FREE DUST COVER WORTH 3.99 5. BUY 35 PD DISKS & GET AFRE E JOTSTICK WORTH 6.99 6. BUY 50 PD DISKS & GET 10 FREE PD DISKS WORTH 9.90 *Dust covers to fit a500/a600 & a1200 only)only 1 free gift per order

EDUCATION

S

S

COCLEDY DIRECTALIES Learn all about certain types of Directaurs Le Jurassic, Triassic and



CENTRAL LICENCEWARE EST 1991

FREE 1.00 GIFT VOUCHER WITH EVERY ORDER

ANIMS

A55 __Mr Popto Head

A59 Low Level Flight

A63 Arry Vs Walker

A64.....Real Pinball Anim

A66_Porky Pig Anim A67 __Adventures of Chuck

A70-71Max Overdrive (2)

A73__,Spacesbuttle Anim A74.....Ghostbusters+Horse

A76.....Alarm Anim A77.....Flight Anim

A78.....Piano Anim

A79.....Dart Anim A80 Bod Bird Anim

A81.....Holiday Anim

A82_Fillet The Fish

A85Minos Anim

A95 __My Tin Toy

A96....T-Pot 2 Anim

A99 __Terminator 3

A100 Dolphin Dreams

A101-102. Thunderbinis (2)

A104.....Pogo Anim (Z Meg)

A103.....History of Amy

El Education Pack 1

Education Pack 2

Education Pack

Education Pack 4

Education Pack 5

Education Pack 6

Educational Words |

Educational Games ...Math Drill

E10Amiga Function Com E11 ___Devware Ed Comp .Simon Says+S Maths

E16 Colour The Alphabet

Animal Sounds

E24/25...... Read & Learn 1 (2)

EXCLUSIVE ASP

Military War Sounds

E17.....D.T.P. for Children

E13Kxls Pairt

E14.....Storyland 2

E15Colour it

E18Algebra

Е19Апкоадоп

E20Animal Land!

E23 Vehicles Sounds

E26Junior Maths

EDUCATION

A86.....Pocket Watch Arim

A90-93 The Movies 2 (4)

A1....Probe Sequence

A2....Ghorz Pool

	DEMOS
D1	Montal Hargover
D4	Intercepter Demo Wild Copper
DI0	17 Bit Music Demos
	World Demos 21
	Total Remix Demo Produtors (2)
	Red Sector (2)
	New Tek Reel 3 (Z)
	Total Remix 2 Demo TV Theme
	Epic Demo
D34	PD Collection
D36 D37	Virtual Worlds Vectra Sinking Demo
D38	TFF Demo Voyage
D40	Safy Demo
D59 D64	Video Effects 3D Cult Vector Dunce 2
D68	Phenomena Demo
D70	Amos 3D Demo
D74 D76	A Trip to Mars A2000 Genlock Denn
	Budwin I (2)
D83	Bodbnin 2
D85	Crionics Neverwhere Picarlu Demo
D101_	
D102_	
D103_	Total Destruction
D106	Mr B. Demo Comp 4 Walter S.T. Demos
DIII	Defcon 1
D117_	Aaron M/Demo
D118	Cult MVDerno 2
D133_	Precise Demo Precivation
D136	Goldfire Megaderno
D139	88 So What (2) Devils "No Reality"
D144_	The Silents "kee"
D145_	Crystal Symphonies
D148_	Ray of Hope 2 No Brain No Pain
	99 Cyborg Demo (2)
	Couxial Comp
	MC Disk I Coma End of Century 1999
D206	Dreamers 3
	Avengas M/Damo
	17 Bass o Matic (2) Disorder Demo
D219	Tuff Exuff
D225	Cool Fridge Demo
D226	Hardenek M/Demo Hypnautic Hammer
D235	Six of One Demo
D238_	_Planet side
D239	Lemmings Revenge Total Respiray
	Budwain 3
	Phenomena Inerspace
D245_	Total Retrial
D247 D253	Pulling the Trigger CES Demos
D256_	Total Recount
D257	
D262	Spannolytic D-Mob M/Demo
D267	Sun Connection 2
	Kefrens The Wall
	Times Hydra Eectric Demos 1
D274	Defruckers Demo-
D276	Cave La Wein!
D279	Iraqui Demo 81 Delerious (2)
	LSD Demo
D312	Devils Colours
	Trakno
D325/3	The Groove Ramjan 26 Real Empathy (2)
D328/3	29 Red Dwarf (2)
D330_	Darkness M/Demo
D332	Melted Experience 37 Odyssey (5)
D340.	Watchman Demo
D341_	
D342	Ed 209 The Revenge 44 Hardwired (2)
D346.	Wildfire M/Demo
D347.	Mindwarp M/Demo
D348/3	49 Skizzo Demo (2)
	352 Treucle Team (3) Mr Men Stories
D359	Seeing is Believing
D360.	State of the Art
D361.	Mayday Resistance 63 Jesus On Es (2)
D364	—Fish Tank
D365	Optimum Pressure
D366	Mind Rict
DOM:	1-71-0-5
D367.	

A1200

DEGRADER

NOW IN ONLY

1.50ea MOST **DISKS WILL**

WORK NOW

D24/25 New Tek Red 3 (2)	U43_Pinare Composer	G10Dep
D26Total Remix 2 Demo	U44Kefrons Makeboot	G11Bug Buth G12Asteroids
D27TV Therne	U45 P.E. Giant Utils 168	G12 Asteroids G13 Llamatron
D30Epic Demo	U47Label Designer	G14 Escape from Jovi
D34PD Collection	U49 Ultimate Icon Disk	G15Moria Adventure
D36Virtual Worlds	U50Power Comp Utils	G16Ground Attack
D37Vectra Sinking Demo	US1Jazz Bersch	G17Megaball
D38TFF Demo Voyage	USSVisicale	G18
D40Safy Demo	U57Quickberich	G19Various Adventures
D59Video Effects 3D	U59 Fort Designer	G30Battleforce
D64Cult Vector Dunce 2	U60 D-Paint Fonts 1	G22 Dragon Cave
D68 Phenomena Demo	U61D-Paint Fonts 2	G34Rings of Zon
D70 Amos 3D Demo	U62Med 3.20	G25Mayhon
D74A Trip to Mars	U63 Direct Anim Creator	G26Meshflight
D76A2000 Genlock Demo	U64Crossword Designer	G27 The Termis Game G28 Fluidhler
D81/82 Budwain 1 (2)	U66CLI Help+Others	G29 Buck Rogers
D83 Budmin 2	U67_S/Tracker Mega	G30 Greyslayer
D85Crionics Neverwhere	U68 Ultimate Boots 1	G31
D87Pionha Demo	U69_Ultimate Boots 2	G32Mega Comp 1
D101Akugng M/Demo 3	U73Powerlogo	G33-34. Star Trek 1 (2)
D102A Chaplin Demo	U74M-Cad	G35-37 Star Tirek 2 (3)
D103 Total Destruction	U75 Journal Home Aces	G38-39Mediforce (2)
D105Mr B. Demo Comp-4	U76Home Utilities	G40Klondykz
D106Walter S.T. Derrios	U77Electrocad	G42Car
DIIIDefcon I	U78Ami Basc	G43Games Comp 2
D117Aurora M/Demo	U81Boothench V2.0	G44SEUCK Gunes
D118 Cult M/Demo 2	U82 Slideshow Maker	G45 Sacc Games Comp
D125Precise Demo	UR3Catalog Worleshop 1	G46
D133Facination	U84Catalog Worleshop 2	G49Games Comp 4
D136Goldfire Megademo	U87Hard Disk Utils	G50Games Comp 6
D137/138 So What (2)	U89-94_Amateur Radio (6)	G51-52Trucking (2)
D139Devils "No Reality"	U95C-Light+Others	G53Jerpack
D144The Silents "kee"	U96GFX Uids I	GSSQuick and Silva
D145 Crystal Symphonies	U100Ham Lab	GS6Miniblast
D148Ray of Hope 2	U101Sid V2.0	G57Larner Gurne
D149No Brain No Pain	U108A-Gene	G58
D158/159 Cyborg Demo (2)	U113Md Utilities	G59
		G60Pom Pom Gumer
	U118/119Video Utils (2)	G61 Cave Russer
D197MC Disk I Coma	U132GFX Utils 2	Cl62
D199End of Century 1999	U13V134North C (2)	G63Intact
D206Dreamers 3	U136CrossDoss (derno)	G64 Eternal Rome
D208Avengers M/Deroo	U138Squid Squid Utils	O65 Lemmingoid
D216/217 Bass o Matic (2)	U139Terminalities V1.0	G66
D218Disorder Demo	U140Squash 1 (2.04 only)	G67Lame St Ports
D219Tuff Enuff	U141 Squash 2 (2.04 only)	G68Paranoid G69Paranoid
D225Cool Fridge Demo	U142Text Plus 3	G69Puggles G70Chainsaw Death
D226 Hardenek M/Demo	U144Dennis Samples 1	G71Pinte Poch Timsarc
D233Hypnanic Harnvoer	U145,Digital Intro Design	G72 Sense 2
D235Six of One Demo	U146Viz.Clip Art	G73Carles
D238Planet side	U147,Spectrum Emulator	G74 Dynamie Dick
D239 Lemmings Revenge	U151Slipstreum V/Killers	G75 Card Games
D249Total Resprity	U152 Red Devils Utils 6	G76Wazy's Quest
D243Buffmin 3	U154Arrigator, W/P	G777 Gerwith
D244Ръскопасна Іпстерисе	U155	G78State
D245Total Retrial	U163Quickbench + (2.04)	C779Asic Attsc
D247Pulling the Trigger	U164Rim Dotabusc	C80Napoleonic Sim
D253CES Demos	U166Dennis's Hack Disk	O81Project 1
D256Total Recourt	U167Demolisher Utils	CR2 Least Zone CR3 Leastings Pack
D257Total Rebute	U168Home Business 3	G83 Learnings Pack G84 Star Trek SEUP
D262Spasmolytic	U172Squelch (1.3 only)	ORSZes
D264D-Mob M/Demo	U176GFX Utils 3	G87MadedPain
D267Sun Connection 2	U177Star Charts	G89Style Pt
D270Kefrens The Wall	U179-180Dice (2)	O(i)
D271Times Hydra	U181Celtic Derroo Muker	G92 Riterard
D272Electric Demos 1	U186/206Track lrs 10-30	G93 The Maze Game
D274 Defpuckers Denno	U207lcon Collection 1	O94 Subculture
D276Cave La Woird	U208Dave Jones Fonts !	G95Hollywood Tevra
D279Iraqui Demo	U211Chemesthetics	G97 Shortur
D280/281 Delerious (2)	U212 Animuted Pointers	1099
D307LSD Demo	U213Desk Top Publisher	G100Amos Coindrop
D312Devils Colours	U215 Messy Sid 2	G101 Classic Comp 1 G102 Card Games 2
D314Tnámo	U216Master V/Killer 2.2	
D315The Groove Ramjam	U218Data Base Wizard	G103Super Skoda Chall G104Gnad Prix Sire
D325/326 Real Empathy (2)	U223 Ten Pin Data Base	G106 Computer Conflict 2
D328/329 Red Dwarf (2)	U224Q-Base Data Base	G107Mission x Raid 2
D330Darkness M/Denso	U226 Games Solutions 1	G108NU Game
D332Melted Experience	U231D-Priest Forte 3	G110Tricky + The Turn
D333-337Odyssey (5)	U235 Ami Cash VI	G111Mattie Slide
D340Watchman Demo	U238kommenia	G112Games Comp 10
D341Anurchy Smoker Co	U240kon Editor	G113 Black Jack Lab
D342Ed 209 The Revenge	U252Opticomms 2.0	G114 Dungson of Madroj
D343/344 Hardwired (2)	U254New Superfallers 2	G115 Arriga Columns
D346Wildlire M/Demo	U255Protracker v2.0	G116Robocop in Iraq
D347Mindwarp M/Demo	U256Atari ST Emulator	G)17Muturi Cursels
D348/349 Slázzo Demo (2)	U258D-Copy 3	G120-122_Warlock (3)
D350-352Treacle Team (3)	U262PC Emulster	G124 Bart Simpson G126 Air Acr 2
D358Mr Men Stories	U273 Vidi Fonts I	
D359 Seeing in Believing	T 4 99/2 4 19 1 1 1 1 1	G127Breakout Con Kit G128Ppeline
D360 State of the Art	U274Illinoi Labels	LANGE COLOR SERVICE
D361Mayday Resistance	U275 600 Business Letters	
	UZ75600 Business Letters UZ79Invoice Printer	G129 Dang of Dondan
D362/363 Jesus On Ex (2)	U275600 Business Letters U279Invoice Printer U283Headline Foots	G129 Dang of Doridian G215 Armon Games 1
D362/363 Jesus On Ex (2) D364Fish Tank	U275600 Business Letters U279Invoice Printer U283Headline Foots U289Arms Updater	G129 Dang of Dondan
D362/363 Jesus On Ex (2) D364Fish Tank D365Optimum Pressure	U275600 Business Letters U279Invoice Printer U283Headline Foots U289Arms Updater U290Kickstart 2.0	G129 Dang of Dondan G215 Arrow Gamen 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes
D362/363 Jesus On Ex (2) D364Fish Tunk D365Optimum Pressure D366Mind Riot	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arnos Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2	G129 Dang of Dondan G215 Arnos Gamen 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer
D362/363 Jesus On Ex (2) D364Fish Tunk D365Optimum Pressure D366Mind Riot D367In The Can Demo	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0	G129 Dang of Dondan G215 Arnos Gamen 1 G212-214 Tirrelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey
D362/363 Jesus On Ex (2) D364Fish Tank D365Optimum Pressure D366Mind Riot D367In The Can Demo D368	U275	G129 Dang of Dondan G215 Arnos Games 1 G212-214 Tirrekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz
D362/363 Jesus On Ex (2) D364Fish Tank D365Optimum Pressure D366Mind Riot D367In The Can Demo D368Dynamic Illusions D369Pece of Mind	U275	G129 Dang of Dondan G215 Arnos Games 1 G212-214 Tirrekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Chainnaw
D362/363 Jesus On Ex (2) D364Fish Tank D365Optimum Pressure D366Mind Riot D367In The Can Demo D368	U275	G129 Dang of Dondan G215 Arnos Games 1 G212-214 Tirrekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Chainnaw G222 Roulette
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arnos Games 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Omionow G222 Roulette G223 Premier Pics
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arnos Games 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Chalonow G222 Roulette G223 Premier Pics G324 Thrust Duets
D362/363 Jesus On Ex (2) D364Fish Tunk D365Optimum Pressure D366Mind Riot D367In The Can Demo D368Dynamic Illusions D369Piece of Mind D370JD Demo 2 D371Lethal Exit D376World of Commodore	U275	G129 Dang of Doridian G215 Arnos Games 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Chainnew G222 Roulette G223 Premier Pics G324 Thrust Duets G225 Withhle Giddy
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arnos Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Creat U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Garne Tarner U308 Music Base VI	G129 Dang of Doridian G215 Arnos Games 1 G215-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arnos Child Quiz G221 Texas Chainnaw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Wiltble Giddy G226 Super Pong
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Crea U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Gurne Tarrer U308 Munic Base VI U309 P Minicrusch	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Tirnekords 6-8 G216 Super Sid G217 Light Bibles G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainnaw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Withhie Giddy G226 Super Pong G227 Fruit Sulad
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Crea U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Garne Tatrier U308 Munic Base VI U309 PP Minicrunch U311 Vmorph V2.30	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Tirnekords 6-8 G216 Super Sid G217 Light Bibles G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainnaw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Sulad G228 Brainhow
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainnaw G222 Roxiette G223 Premier Pics G224 Thrust Duets G225 Withhle Giddy G226 Super Pong G227 Fruit Salad G228 Brainhow G132 Peters Quest
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Timekords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arross Child Quiz G221 Texas Chainnaw G222 Routette G223 Premier Pics G224 Thrust Duets G225 Withle Giddy G226 Super Pong G227 Fruit Salad G228 Brasthow G132 Peters Quest G133 Star Trek 3
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainusw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Withle Giddy G226 Super Pong G227 Fruit Salad G228 Brasiloow G132 Peters Quest G133 Star Tick 3 G134 Piperider
D362/363 Jesus On Ex (2) D364	U275	G129 Dang of Doridian G215 Arros Garnes 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainanw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brazirlow G132 Peters Quest G133 Star Tick 3 G134 Piperider G139 Door to Door
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arnos Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Ultimate Disk Orea U297 10 PD Copiers U298 Protracker V3.0 U299 Ackless Print V3.1 U303 Garne Tarner U308 Munic Base VI U309 P Minicrurch U311 Vmorph V2.30 U313 Prohstology U314 Pools Wizard Ir U319 Lister V2.1 U320 Garden Designer U327 Bezier Surf	G129 Dang of Doridian G215 Arros Games 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainanw G222 Resilette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brasiloow G132 Peters Quest G133 Star Tiek 3 G134 Piperider G139 Door to Door G143 Solid Quad
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arnos Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Creat U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Garne Tarner U308 Music Base VI U309 PP Minicrunch U311 Vmorph V2.30 U313 Pto Astrology U314 Pools Wizard Ir U319 Lister V2.1 U320 Garden Designer U327 Bezier Surf U329 Music Engine V3.4	G129 Dang of Doridian G215 Arros Games 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainanw G222 Roulette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brainhow G132 Peters Quest G133 Star Tick 3 G134 Piperider G139 Door to Door G143 Solid Qual G144 Ornega Race
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Crea U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Gurre Tarrer U308 Munic Base VI U309 PP Minicrunch U311 Vmorph V2.30 U313 Pto Astrology U314 Pools Wizard Jr U319 Lister V2.1 U320 Garden Designer U327 Bezier Starf U329 Music Engine V3.4 U330 Starview	G129 Dang of Doridian G215 Arros Games 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainanw G222 Roolette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brainhow G132 Peters Quest G133 Star Tick 3 G134 Piperider G139 Door to Door G143 Solid Qual G144 Ornega Race
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Creat U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Garne Tarner U308 Monic Base V1 U309 PP Minicrunch U311 Vmorph V2.30 U313 Pto Astrology U314 Pools Wizard Ir U319 Lister V2.1 U320 Garden Designer U327 Bezier Surf U329 Music Engine V3.4 U330 Starview U331 X-Beat Pro	G129 Dang of Doridian G215 Arros Games 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainaw G222 Resilette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brainhow G132 Peters Quest G133 Star Tick 3 G134 Piperider G139 Door to Door G143 Solid Qual G144 Ornega Race G199 Teinen
D362/363 Jesus On Ex (2) D364	U275 600 Business Letters U279 Invoice Printer U283 Headline Foots U289 Arms Updater U290 Kickstart 2.0 U293 Black Tiger Utils 2 U294 Text Engine V4.0 U296 Utimate Disk Crea U297 10 PD Copiers U298 Protracker V3.0 U299 Address Print V3.1 U303 Gurre Tarrer U308 Munic Base VI U309 PP Minicrunch U311 Vmorph V2.30 U313 Pto Astrology U314 Pools Wizard Jr U319 Lister V2.1 U320 Garden Designer U327 Bezier Starf U329 Music Engine V3.4 U330 Starview	G129 Dang of Doridian G215 Arros Games 1 G212-214 Timelords 6-8 G216 Super Sid G217 Light Bikes G218 Relayer G219 Air Hockey G220 Arros Child Quiz G221 Texas Chainaw G222 Resilette G223 Premier Pics G224 Thrust Duets G225 Withlie Giddy G226 Super Pong G227 Fruit Salad G228 Brainbow G132 Peters Quest G133 Star Trek 3 G134 Piperider G139 Door to Door G143 Solid Qual G144 Omega Race G199 Teinen G200 Butlecnes 2

	GAMES	G199	Topon
JI	Return to Earth	G200	Batkon 2
72	Games Comp.5	G201	Dr Mino
73	Dizzy Lizzy	G204	Ashab
4	Scurp Haters	G305	Christi Dirk 2
75	Parachuse Joust	G206	Christi Diek 3
б	Frantic Freddie	G208	Airport
		G209	FRAC
E	Twintis	G210	The Golden Flexor
9	_Pseudo Cop	G211	Legand of Lotium
10	_Drip	G229	Jeopati
711	Bug Bath	G230	Space Invasion
12	Asteroids	G231	Kunse Wors
13	Llamatron	G232	Super Longue Merr
14	Escape from Jovi	G233	PDCityComp1
15	Moria Adventure	G234	Coixe Charges
16	Ground Attack	G235	Batk of Benan
17	Megaball	G236	Super Twentin
318		G237	Cartie
119		GZ38	
30	Batteforce	G29	Number (+coly)
722		G249	Kong Fu Charles
734	Rings of Zon	(38	Micro Maket
325			Bind Ramer
	Maybon	G145	Mission x Raid 3
126	Mechflight	G146	Trek 73
127	The Teenis Game	G147	Wash in Wonderlan
328	Fluibbir	G148	Squa Revenge
729	Buck Rogers	G149	Sky Fight
130	Greyslayer	G150	
331		GLSL	
732		G152	
733-34	Star Trek 1 (2)	G154	Totally Frante Quiz.
135-37	Star Tirek 2 (3)	G155	
738-39	Mechforce (2)	G156	Smail Telly
340	Klondykz	G19	Billy the Dragon
342	Car	G160	I-Ching
143	Games Comp 2	G161	E-Type
344	SEUCK Gunes	G162	Tornot
		G163	So Larce
345	Sacr Games Comp	G364	Dizzy Diamonds
346	Garnes Comp 3	G165	No Mare Land
348	Rays Game Disk	G166	Word Square Solver
349	Games Comp 4	G167	Cost Fire
250	Games Comp 6	G168	Washinda
351-52	Trucking (2)	G170	Space Bigg
253	Jopack	G171	Ctury Sue
255	Quick and Silva	G172	Make a Break
356	Miniblast	G173	Squanhie
057	Larner Garne	G174	.F-1 Chilerge
358	Games Comp 7	G175	Ohelo
			Evil Dead Game
059		GI78	
G60	Pom Pom Gumer	G179	Trained
G61	Cave Russier	G180-11	
G62		G182	Dipiomacy
363	Intact	G183	Tractor Beam
G64		G185	Gam: EkyTexis 2
365	Lemningoid	G185	Water Works
366	Down Hill Challenge	G187	Actof War
G67	Lame St Ports	G188	Mitzer Gamen
G68	Paranoid	G189-19	93Truelouis 1-5
G69	Puggles	G194	Nivana
G70	Chansaw Death	G195-19	6. Neighbours (2)
	District Product Control		Arrestu Invaders
071	Pinte Poels Timsure		Game Boy Tetris 1
G72	Sentre 2	170 11000	
G73	Carles		
G74	Dynamie Dick		
C775	Card Garnes		
076	Wizzy's Quest	SLID	ENC)

S41	Madonra Slides
S5)	Moviestar Slides
S6_3	Party Disaster
S81	Irranaculate Collection
39	Immaculate Collection Simpsons Slides
S10-11	
S12	Bruce Lee Slides
S14	Address Family
S15	Viz Mog Slides
S17	Docklands.lure
518	Dr Who Derno
\$20	Nora Slides
S22-34	_WWF Slides (3)
527	Demons Slides
S28	Total Recall
529	Joe's skies
530	Ham Pica Show 2
532	Neighbours States
533.	Roger Dean Slides
534	Jron Maiden Skdes
\$35.X	Tobias Richter (2)
538	Baket Care 2
\$39.	Ecos Sixios
540	Francion Devine 2
541	Frazion Devine I
SCL	Golerns Gate Slides
50	Chrimaw Sippers
S44	Cry for Dawn
\$45	Forgotten Renkris (2)
547	Kick Off 3 Slides
S48	PD skleshow
549-53	2Terminator (4)
\$53	Robocop 2 Slides
\$54	Trackruster Styles
555	Forgs tion Residens 2
622	Cortield Slides
557	Pawrinsker Sides
558	Hellmiser Slides
\$59	Night Breed Slides
\$60	Raytracing
S61	Horror Slides
S70	Muscle Mania
571_	Creature Comforts
CHAR	795 781 4 37

S72___The Worder Years

S73......Wateship Down

S75Fenni 348 Pics

S76Belinda Cartisle

S77 Cher Slides

S79Freddy's Dead

S80Wendy James Slides

S81The Invisible World

\$82-83_Terminator 2 (2)

S84Firmay Pics

S85 Gulf War Slides

S88 Gulf War Tribute

S91Eldomdo Slides

\$89-90... \$\text{Thing Fishy (2)}

S86Magical Pics

S1.....Hum Pics Show 1

S. are 1111 of teaching it about	URBORUS 2 0095 14:50
A3Jogger+Magician 1	CICLEID Geology Want to know all about the Volcances and their substances. Then by
A4 Gymnast Demo	this 2 disks 54.50. CICLEDT SOLAR SYSTEM Know more about the Solar system with info on Planets etc.
A5 _Fractal Plight	with pictures. 3 disks §4.99.
A6Basketball Denso	CICLEN COLDURING PAD A unique colouring book to keep the kids amused for hours. 1
A8Walker Demo	disk £3.50. CICLEOS & CHORD Learn to play guitar by listening to residy every single chierd available.
A9Magician 2	1 dsk 23.50
A10Pugs in Space	CICLEDS MATHS INSTRUCTOR Set through the GCSE's with this Maths instructor, Trig., Quadratic, Area etc. 1 disk \$3.50.
All Lipor Tomoger	CICLEST FRESHWATER FISHING Think you know all about fetting? Try this 2 dialo.
A13Juggier Demo	E4.50
A16_CoolCougar	COLEGE MIGHT SKY Look at the starn, planets etc from anywhere and click on any object for into, 1 disk \$3.50.
A17Mono Cycle Anim	CICLEDS WORDS + LADDERS A word spelling game for 1 or 2 players, 1 disk £3.50.
	CICLE 10 BASICALLY AMIRGA Get to know your Amiga to the full, 3 disks E4.99.
A18Robccop Anim	COLETS LEASH V1.1 Learn surra, tunes, codes etc on this learning aid. Age range from 5-7, 1 disk 53-50.
A20Mayhern On Wheels	CICLE 12 ALPHABET TEACH Try to spell what you see on the screen, 1 dek £3.50.
A21Jugette 2	COLETS MAKE SINES! With recipes to instructions on femerating etc. Learn how to
A22 Shuttlecock Arim	make home made wine. 1 disk E3.50. CICLE14 ECOLOGY Learn more about Ecology with this brill program, 3 disks £4.99.
A23T-Pot Anim	COLETS FAST FRET Learn scales on the guiltar and become as good as the best, (with
A27Floot Manouvre	Stored, 1 data E150. CDCLENS KINDS AND GUEENS Find out all the Monarchy's history with this program.
A28Billiard Azem	(with pictures) 2 disks \$4.50.
A29 E/Prise Leaves Dock	CICLET? THEMCAMAJIS Brill place type education program 1 disk \$3.50.
A30 Starwars 2 Anim	CTOLETS WORK AND PLAY 3 educational programs to help children learn easily, 1 disk 23.50.
A31Star Tirek Arrim	COLETS PLAY IT SAFE. The will best diliber what safely is trade and outside 1 dail \$1.50.
A32 Fraxion Revenge	COLEZO BBB TOP FUM Another 4 programs to help the children, 1 disk k3.50
A34 Makenu Anim	COLEZY JIEMANIA 2 igraw type educational programs on this dels. 1 dels 53.50. COLEZY CHESS TEACHER Lisen how to play chess the casy way with this tracking aid.
A35 Sealthy Anims 2	1 del £3.50
A36 Raiders of the L/Ark	COCLESS MINIO YOUR LANGUAGE. Like a dictionary this explains word meanings but
A37 Bugs Burny Show	simplified, 1 disk E150. CICLE/4 SPEED READONG Learn the art of tast reading if you have problems, 3
A38lraq Vs UK Anim	他的铁路
A39Mike Tyson Anim	CICLE'S CHORD COACH V2.1 Learn how to play different chords on the plans. 1 disk 23 50:
A42Walker 2	CICLE'S SHAP Mach silhoughs with the colour pictures on screen. Age 34.
A43Walker 3	1 69 5350
A45-46Light Cycle (2)	COCEZY CATAT. A complete Tarot card translator for the psychics among us.
A47 Exploding Head	COLEZE FUN WITH CURBY 6 programs to help the children learn with fun.
A48PoiceCarChine	1tn (150
	COLESP PREMISTORIC FUN Learn about the directions with 4 great games. 1 data £3.50.
A49Top Gun Demo	COLESO PEG A PICTURE Draw pictures with either pags or shapes, occalient for
A50Animators Demo	Children 1 des (3.50) CPC CON INSCRICTAMENTAL BANDS 9 Marine carbillates immine about forces.
A515 Ways to Kill a Mole	COCLEST UNDERSTANDING AMOS 2. Having problems learning about Amos. Not anymore with this program. 2 disks E4-50.
A52Another 5 Ways	CICLE33 MESSERSCHMITT BF100 Learn about different parts of this plane with
A53Batman the Movie	graphics, 2 disks \$4.50. CICLE34 YOUR FIRST PONY What to look for and how to look after your first pony
A54_3D Spaceship	(book), 2 data \$450.

DICLESS MY LITTLE ARTIST. Superb colouring book for children with features for

DISCOVERY AMERICA Listmall about colorisation of U.S.A. 1 disk \$3.50.

HOME INVENTIONS: First in the quest for knowledge series, this picture book

CICLE35 TC SOLAR SYSTEM 2 Sequel to set 1, superb 3 disks E4.99. THE TIME MACHINE Traches kids to tell time. 2 disks E4.50.

ununes	
LUCT VIDEO TITLER Make your videos look professional, scrollers etc. 1 disk £3.50.	
LUCZ FISH INDEXER A full database of the Fred. Fish fibrary, 1 disk £3.50.	
LUCS TYPING TUTOR: Typing can be no longer a problem with this, 1 disk \$3.50.	
LIO4 A-GRAPH Create pie crists and bar graphs with ease, 1 disk \$3.50.	
LUCS SAS MENU MAKER Make menus to suit you, 1 deak (3.50.	
LUO7 PHILD An easy to use but powerful distation system, 1 disk £3.50:	
LLOS WORD FINDER Solve the crosswords easily, 2 disks £4.50.	
LUES PLAY AND RAVE 2 A music module linker to create music, 2 disks \$4.50.	
LiftO POWER ACCOUNTS Keep accounts of your expenditure with password	
ndion, 1 disk E1.50.	
LUTT CALC VT.3 An excellent spreadsheet by these cross calculations, 1 disk £3.50.	
LET2 VIRTUAL WINDOWS 1 A collection of stillites like address book, notepad.	
offware cata etc. 1 drok E3.50.	
LU13 BATOS Easy to use yet very powerful database. 1 disk £3.50.	
LU14 STOCK CONTROLLER Keep up to date with your stock control, 1 disk £3.50.	
LETS EPOCH Very powerful calendar utility: 1 disk \$3.50	
LU15 CROSS STITCH Useful needlework utility, 1 disk £3.50.	
LUTY LCTO FONTS Different lands for your LCTO Printer, 1 disk £3.50.	
LU15 LC200 FONTS Different fonts for your LC200 Printer. 1 disk £3.50.	
LUTS LCCA FORTS Different forts for your LC24 Printer. 1 dok 53.50.	
LUZO CAMON BJ10 FONTS Different funts for your BJ10 Bubblejet printer.	
69 (3.5);	
LLC1 WYDICE MASTER Sof your invoices out easily with this one, 1 disk E3.50.	
1U22 H.D.M. v1.1 A hard drive multitasking menu system. 1 disk 53.50.	

STAR FRONTER ANIMORIUSHES. Even more axin brushes for paint packages. STAR WOYAGER ANIMERUSHES 11th nove animbrushes for paint packages. IMAGEBASE: A very powerful image disclose to store pictures lest and sound.

F-15 ANIMERCONES Arim brother for paint packages. I disk \$2.50

RED LUTUS AMINIBRUSHES More arish brushes for paint packages.

GAMES
DLGGS TRUCKING ON Try and manage your own truck fleet, excellent, 2 doks \$4.50. QLGGS DRAGON TILES Did Japanese type mahlong style game, 1 disk \$3.50.
CLEASE MOTTOR DIOSE. Drive a 30 car shooting and racing with opponents.
t drik ESSO. CLGTT ALL GURES BLAZING. Car game for 2 players with the overhead view theme.
1 dek E1.50. CLG12 BURLINGZER BOB. Wipe out the screen of coloured blocks, 1 disk E3.50.
CLG13 PARADOX A puzzle garte to test those powers of solving, 1 disk £3.50.
CLG14 SONIC SMARTTENEAD Acother platform style game, 1 drsk £3.50. CLG15 SPLOOGE THE REVENUE Arother platform game with puzzles to solve.
1 disk £3.50
CLG17 INVENIUM DAY OF RECKDINING One of those graphic adventure type games, excellent 1 disk £3.50.
CLG18 SKAN 29 Brill platformer with 270 levels and end of level moretiers. 1 disk E3.50. CLG19 STELLAR ESCAPE Vertical scrolling shoot em up game, 3 disks E4.90.
CLG 20 JUNGLE BUNGLE A mouse icon driven asternus that will have you playing
for frours, 1 disks £3.50. CLG 21. FLOWER POWER Try and grow flowers before the bugs eat them.
1 disk £3.50.
CLG 22 STOCKING FILLERS 3 games all with Christmas themes, 1 disk £3,50.

MARVEN THE MARTIAN A massive maze type game where you collect things

EASY MONEY Excellent that machine (not plus compat), 1 drsk £3.50.

MONSTER ISLAND A strategy type adventure along the lines of Dungeons

9 BELY BALL Guide Billy through 5 worlds of muzes. Excellent game. CLG 30 CAPTAIN K. Collect flowers and kill baddies to move to next level. Good funf.

THE RIFT Excellent platform adventure along the lines of Turrican.

WHETE RABBITS Another puzzle type game. 1 disk £3.50

TXCLG 31 DIRTY RACKETS 3 Texnis platform garret 1 disk £3.50.

RAVE & TECHNO PACK 1

ORDERNO PO 1 ICE INSTYLE WITHALL THE LATEST PAVI AND TECHNO SOUNDS ON THE AMIGA 10 DISKS FOR ONLY 10.50+P&P

RAVE & TECHNO PACK 2 ORDER NO: PO 11 YET MORE OF YOUR FAVOURITE DANCE TRACKS TO KEEP YOU RAVING

EDUCATION PAC ORDERINO, PO2 LEARNLANGAGES, PLAYGAMES, WATCH DEMOS, PAINT PICTURES, ETC AGE RANGE

10 DISKS FOR ONLY 15:50+P&P

10 DISKS FOR ONLY 10:50 +P&P

OLIPART PACK ORDERNO: PO3 ATTH 100S OF PICTURES TO CHOOSE FROM THIS IS A MUST FOR ALL YOU DEPANT AND

10 DISKS FOR ONLY 15:50 +P&P ORDERNO: PO4 WHETHERITS JUST TYPING ALETTER OR KEEPING A RECORD OF YOUR FINANCES THIS IS A DEFINITE MUST

ORDERNO: PO 10 EVENMORE UTILITIES TO KEEP YOUR FECORDS RUNNING SMOOTHLY 10 DISKS FOR ONLY 10 50 +P&P

10 DISKS FOR ONLY 10:50 +P&F

ORDERNO: PO8 THIS IS FOR ALL YOU START THEK FAMS.
CONTAINS START THEK GAMES 182.
AND OTHER ANIMATIONS ETC.
10 DISKS FOR ONLY 10:50+P&P.

ORDERINO: PO9
CANT FIND THOSE CAPDS FEAR NOT
ALL YOUR FAVOURITE CARD GAMES
ARE AT HAND IN THIS PACK
10 DISKS FOR ONLY 1050+P&P

ECTRUMEMULATOR ORDERNO:PO7 HENEW 1.7 BMULATOR WITH FOUR GAMES DISKS, 66 GAMES IN ALL AMUST FOR ANY COLLECTION 5DISKS FOR ONLY 625 #P&P

ASSASSINS PACKS 1.50 EACH

10 DISKS	10.50+P&F
30 DISKS 40 DISKS	28.50+P&F 34.50+P&F
54 DISKS	43.50+P&F
70 DISKS	58.00+P&F
ALL 116	95.00+P&F

AND THE RESIDENCE OF THE PARTY OF	
ACCESSORI	ES
MOUSE HOUSE	2.50
MOUSE MAT	2.00
AMIGA MOUSE	14.99
10 CAP BOX	1.99
A500 COVER	3.99
A600 COVER	3.99
A1200 COVER	3.99
3.5 DISDD DISKS	0.69
MONITOR STAND	10.99

ALL YOU NEED TO DO IS PUT THE NUM-BERS OF THE DISKS REQUIRED AND SEND IT TO THE ADDRESS BELOW ALONG WITH A CHEQUE OR P.O MADE PAYABLE TO DISKOVERY. PLEASE DON'T FORGET TO INCLUDE THE COR-RECT POSTAGE TO ENSURE SPEEDY DELIVERY

PRICES

PUBLIC DOMAIN 1-9 = 1.50 each

E

M

POSTAGE Europe PD = 60p 10+ = 1.25 each Accessories = 90p 20+ = 0.99each World PD = 1.50

Accessories = 1.90

VISA

SEND YOUR ORDER TO ...



WE ACCEPT ALL MAJOR CREDIT CARDS

DISKOVERY DEPT (AS), 108 THE AVENUE, CLAYTON, BRADFORD, W. YORKS, BD14 6SJ



you'll then be able to find the disk from that huge pile balanced precariously on the edge of your desk, won't you...? Even more usefully, you can look for disks with more than a certain amount of free space on them – great when you really need to back up your work files but you can't remember which of those cryptically-named floppies only has a couple of files on it and which are full to the brim.

The program recognises a range

just remember to label it...

Program rating 9/10

PLOTTERS

PDSoft disk V1068

PDSoft do a number of this type of disk: collecting several similar programs and sticking them all on one floppy. Some are more useful than others, and occasionally it looks as though the programs have been selected by title rather than by function – as you'll see with this

Status: Browsing	through da	CONTRACTOR OF PERSONS ASSESSMENT OF THE PERSON OF THE PERS			WEST DESCRIPTION	ATERISAN
Total: 3 Dete: 17-81-1992 Title: DiskManage	Currer Time!	19:38:51	# Full: 6	7	pos: ofs Page: 1 of	2
File Name		File 5	itze	Descript	ion	SSEE
DiskManagerIII scandisk.help main.help usehelp.help pick.help opt.help rescan.help files.help sfile.help sfile.help setbase.help edbase.help xcf.help xcf.help logdrive.help		859678-668539-2779 889678-5638-67878		Unchecke		
	illdcard	Disk Labe	HEL	P. 100 19 19 19 19 19 19 19 19 19 19 19 19 19	0K	9090
Prev Disk N	ext Disk	<<	>>	Contable 4 TER	Goto ID	

DiskManager III: keep a track of your floppy disks with this great utility – it even remembers how much free space there is on each. Now that's handy!

of different program types, so you will be told that, for instance, "makeamillion" is an AMOS file while "begtobank" was created in your word processor. All useful stuff, and anyone thinking of setting up a PD library, or anyone with a large number of floppies lying around, would do well to check this program out. My only real complaint is that in the report view you can't do anything such as quit from the program even though the menu items are still enabled. It would be nice if the program either allowed you to do such things or at least dimmed the menu items so that you know to click on the "OK" button before trying to do anything else. Still, this is a minor quibble, and certainly doesn't detract

DiskManager III is certainly well worth its £10 shareware fee, just for the "search for free space" feature – and floppy-only users needn't worry: it works fine without a hard drive, storing the database on the same floppy disk as the program itself. But

from the program's usefulness.

collection. Regardless of that, though, the disk contains a couple of useful graph plotting programs, and is certainly worth checking out.

First up is Amiga Plot 1.3, a three-dimensional function plotter. According to the documentation, it "takes a function derived by the user, parses it into a partially compiled form and then calculates coordinates to be placed in the xyz system." What this means in practice is that you get the kind of cool 3D graphs that no-one knows guite how to create but everyone loves. Seriously, the program is fast, works well and gives you full control over things such as rotation of the image, the increments in x and y coordinates used to plot the graph and the range of both x and y axes. You can even save the image out as an IFF file - which is what I did to get the picture on this page.

PlotXY is a two-dimensional plotting program, which plots graphs from data points rather than from a formula – great for scientists and

Aniga Piot V1.3a 97/88 Joe Hartin (C) Copyright 1998

Amiga Plot: just one of the programs on PDSoft's disk V1068. Cool or what? (Actually, you even get two versions of the program, but we won't quibble...)

others who want to get a graphical representation of data. It deals with different types of graph – linear, linear-log, log-linear, log-log and histograph – and enables you to add grids, titles, legends for the axes and so on. There are even different options for the look of the mark used to show where each data value lies.

Finally on the disk is – Amiga Plot 2.0. Yes, for some reason both versions 1.3 and 2.0 are on the same disk. Perhaps it's because one of the programs is named "aplot" and the other "plot". Still, there's really no reason to have two versions on the same disk, and it would have been nice to see a standard, two-dimensional function plotter included instead.

Version 2.0 has plenty of improved features over 1.3, although the basics are still the same; it's mainly user-interface considerations that have been changed, although the author does also claim a 10 to 15 percent speed increase.

Value for money 7/10

VIDEOBASE

I know, I know, I said that I wasn't going to review any more database programs unless they were something extremely special, but I thought that I'd give this one a mention since it was written by John Cassar, the same person who wrote Communicate (reviewed on page 112 this issue). It's a fairly standard video database program, created in AMOS, but it has enough useful features to be worth mentioning. For starters, it's rather more intelligent than most. As an example, if you enter a film time in minutes (85, say), the program automatically converts that to "1:25" - rather than stupidly assuming that you meant 85 hours, or asking you to re-enter because it doesn't understand.

Many of the fields have automatic values, which cycle as you click on them. The certificate field, for instance, cycles through U, PG, 12, 15, 18 and XX (there isn't room for the third X). (Although in fact there's no such thing as a 12certificate video, unless I'm mistaken; the 12 certificate is for films only.)

There is room for five programme titles per video, and underneath there's a graphical and text display of how much of the tape has been used and how long is left – but for standard and long-play machines. This enables the program to offer a "find empty space" option – ideal if, like me, you've got loads of tapes lying around with a few minutes blank at the end of each one.

I've said it before, and I'll say it again: I don't really see why anyone would want to take the time to fire up their Amiga, load a program and then search through to find a specific videotape. Unless you've got whole roomsfull, it's quicker just to scan the labels. However, if you're the sort of person who really does want to do the whole thing on computer, *Videobase* is probably about the best around. And it's free, too.

Program rating 8/10

Disk magazines

There have been a few disk magazines sent in over the last few weeks – many from the "old faithful" crowd. Here's the pick of the crop...

DIGITAL DISK ISSUE 3

This is the third issue of *Digital Disk*, and it gets better with each issue. It's available free (issues 4 onwards will cost real money) and it's available from Digital Disk Publishing, 70 Donald Drive, Chadwell Heath, Romford, Essex RM6 5DU. Just send two blank disks (it's a two-disk mag) and a stamped, self-addressed envelope.

Contents include the running "interactive adventure", which is a narrative story with the story



Digital Disk issue 3: this disk magazine gets better with each issue, with game reviews, features on music and AMOS, and an "interactive adventure".

direction decided by the majority vote of readers. I'm not keen on the thing, I have to admit, but I'm sure that many people like it. There's a decent news section, which covers the Amiga and also the Atari ST family (the disk is multi-format, and available on the Amiga, ST and PC although the PC version has been postponed for a month or so, apparently to write a new front-end and put some new staff members in place). There's an AMOS tutorial, reviews of games, space for reader ads when some are sent in, features on computer and conventional music (sadly the authors seem to lean towards "house music" as a favourite style, but I suppose we can't have everything...), pictures, song lyrics (from most of REM's Automatic for the People album in this issue)... something, as they say, for everyone.

The only trouble with the magazine seems to be that there hasn't yet been much reader feedback - no letters, for example, on the letters page. With luck, as more people get to hear about the mag, this will change - it certainly deserves to succeed.

A "trial subscription" is £10 for four issues, or you can subscribe for a whole year for £26 (12 issues). However, if you mention Amiga Shopper when you subscribe, you'll get £1 off that rate. And you can't say fairer than that!

Value for money 8/10

NOTHING BUT AMOS

Nothing But AMOS (or N.B.AMOS for short) is, as you might have guessed, a magazine strictly for and written in - the popular AMOS programming language. Yes, written in, because the viewer is apparently the result of months of coding effort. It's certainly slick, with nice chunky 3D-effect buttons for scrolling and so on (although the scroll up and down buttons confused me for a while the upwardly pointing button scrolls down through the text). It's a shame that the programmer, Neil Wright, seems to have decided to only use the NTSC portion of the screen for

the text viewer, meaning that the bottom third or so is blank - why couldn't the text take up the whole screen area, as the pictures do?

The content of the disk is divided into articles, pictures and music. The articles are well written, and include plenty of program fragments, although the images aren't particularly wonderful.

Subscribing to N.B.AMOS brings a few extra benefits, along with the monthly disk magazine: reduced prices for disks from the PD library (£1 instead of £1.50), access to the source code of the disk mag for £4.99, and even a "debugging service" - send in your problem program and the team will attempt to debug it for you, free of charge! (Of course, Amiga Shopper's Code Clinic will also do the same for you... this issue it's on page 46.)

N.B.AMOS costs £2.50 for one issue, or £24 for a full year's subscription. Cheques should be made payable to J Rutherford or N Wright, and should be sent to N.B.AMOS, c/o Neil Wright, 39 Riding Dene, Mickley Square, Stockfield, Northumberland NE43 7DL.

Value for money 9/10

MR AMOS CLUB DISK

And... yes, another AMOS newsletter! This one's from the Mr AMOS Club, which has been running for a little over six months – and has already got almost 850 members. Brian Bell, the bloke who runs the club, was responsible for the Charlie Chimp game that recently won the GamesMaster/Europress competition to design a game in AMOS - it was given away on the cover disk of our sister magazine Amiga Format's May edition.

The club's aim is, according to Brian, "to teach all budding AMOS users out there how to write winning software like Charlie Chimp and make a fortune of it all." The club is busy on a number of programming projects including a Streetfighter II clone [Editor's note: this is apparently some sort of (shudder) computer game, I understand], and



Some of the artwork supplied on the Mr AMOS Club disk - images so professional that they're worth the price of the disk themselves!

these will be explained in detail in the club disk magazine.

The magazine has a nice interface, and it's clear that the programmers are very accomplished AMOS coders. However, unless the disk is auto-booted the text face is nearly impossible to read - it's a very narrow, compressed face, and while I could just about make everything out on my monitor, it would certainly have been a real strain if the Amiga had been connected to a television instead. The text only covers half the screen - a good thing, since taking up the entire display would really have made things impossible. This really is a problem that should be addressed, though - it could well put many people off, especially since much of the text is in colour, which adds to the legibility problem. If you autoboot the disk, everything is fine - the font is a nice, chubby, easy-toread affair and covers the whole of the screen. But I didn't realise that this was the case for some time, and the designers should take into account the fact that many of us don't autoboot disks unless we absolutely have to.

The contents of the disk include programming tutorials, contacts information and so on, reviews of programs created in AMOS, and AMOS add-ons such as the compiler, along with some very nice artwork. I

looked at disk three, which contains a couple of great fonts and lots of characters for you to use in your own creations - there's a picture on this page of the contents of one of the files, and you can see just how professional it all is.

The actual programming tutorials aren't the very best that I've seen, but aren't too bad; and in the "advanced programming" section of the disk I viewed, Brian gives some good advice about how to pick subject areas that will make you the most money if you want to program commercially. Disk four will, he says, talk about marketing your products.

Even if you only get the disks for the artwork that's included, they're well worth the price. And the extra information thrown in means that they are an invaluable resource to any AMOS programmer, from beginner to professional.

Issue one of the club disk costs £1, issues two and upwards cost £2.50 in the UK, inclusive of postage and packing. The disks come out bimonthly, and if you send a cheque for more than one issue you'll get the new releases as soon as they're ready. To order, make your cheque payable to Brian Bell and send it to The Mr AMOS Club, 8 Magnolia Park, Dunmurry, Belfast BT17 ODS.

Value for money 9/10

continued on page 120

WHERE TO GET

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

The advantage of using a bulletin board (BBS) is that often the latest software is uploaded as soon as it's available. On the downside, you need a modem to connect, and you'll have to pay phone charges (and sometimes a

connection fee to the BBS as well).

There is a growing number of **BBSs** with a wide range of Amiga software available for download. Check out 01-for Amiga (071 377 1358) and the Cheam Amiga Bulletin Board (081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has

Amiga software but also contains conference and file areas on a wide range of subjects. Many of the Amiga Shopper writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on 081 390 8446 (voice) or 081 390 1255 (modem).

If you don't want to use a BBS

or haven't got a modem, the other way to get PD software is from a PD house. Many advertise in Amiga Shopper, and there's a full directory overleaf. Expect to pay between 99p and about £2.50 per disk there's often a discount if you buy in bulk, too. As for the difference between companies which charge 99p and those which charge £2.50 - well, try both types. There are brilliant, totally professional PD houses which charge less than a quid, and total incompetents which charge more than twice that.





ACC HARDWARE PROGRAMMING MANUAL

THE perfect introduction to programming the Amiga's hardware using Assembly Language. Everything you will need to get started is included in the package. Through an integrated environment you can browse through the chapters, load and run examples and invoke the assembler. Topics covered include: Interrupts, Input, The Copper, Replayers, Audio, The Display, Sprites, The Blitter, Scroll Texts and more.

Price: Disk 1 (PD) £1.25, Disks 2,3 and 4 £5.00 each. Postage 60p per order. Amiga Shopper Offer: Disks 2,3 and 4, including postage, for £12.00. Ends Feb '94

Amiga Shopper featured Disk 1 on the coverdisk of their December '93 issue... CU AMIGA: '...should be on the shopping list of every budding programmer.' Rating 89%

FRED FISH DISKS

We stock Fish disks 1 to 890. A catalogue is available on two disks for £1.00

PICK 'N' MIX

Select from hundreds of archives and get just what you want on a disk. There are numerous subjects to select from including utilities, graphics, modules, demos and games.

PICK 'N' MIX CATALOGUE £0.50 PICK 'N' MIX DISKS £2.00 each

ASSASSINS GAMES DISKS

Disk 1 to 110 available. A full list of disk contents is available on our catalogue disk.

ACC DISKS

We stock all ACC disks. Issue 32 now available: contains mainly WB2 programming techniques.

We now stock a range of accessories, eg: 100 Caps Box, Mouse Mat, Dust Cover, Head Cleaner, 10 Disks & 100 Labels as a Starter Pack for £19.00 inc.

SCOPE DISKS

We stock Scope disks 1 to 220. A full list is available on our catalogue disk.

T-BAG DISKS

We stock T-Bag disks 1 to 77. A full list is available on our catalogue disk.

CLR DISKS

We stock a selection of CLR Licenseware Disks. A full list is available on our catalogue disk.

5 DISK PD PACKS

All the following packs have been compiled by Amiganuts and contain 5 disks crammed with material relevant to the subject heading. Price £5.50 plus postage.

DESKTOP VIDEO PACK (NEW) 90 ADOBE FONTS PACK (NEW) 43 CG FONTS PACK (NEW) 32 COLOUR FONTS PACK (NEW) 125 FINAL COPY II FONTS (NEW) CHART MUSIC MODULES 1 (NEW) B&W CLIP ART PACKS 1,2,3 (NEW) ARCADE GAMES 1 ARCADE GAMES 2 (NEW)

PD DISKS

We have thousands of PD disks, too many to list here. Why not send 50p for a copy of our latest catalogue.

PD PRICES

1 to 5 Disks £1.80 each 6 Disks or more £1.25 each

POSTAGE

1 to 10 Disks £0.60 11 to 20 £1.00 21 or more £2.00

1 DAFFERN AVENUE, NEW ARLEY, COVENTRY CV7 8GR

ALL DISKS NOW ONLY £1.05 EACH!

All disks work with the A1200! unless stated

(P) = Works on all Amiga Computers including A1200

HOME MANAGEMENT PACK 3 DISKS (P) Calendar, Mortgage, Spreadsheet, Grammar, Mileage, World Time,

List Maker, Home Banking. CLIPART PACKS 1, 2 OR 3 EACH PACK = 5 DISKS £5.25 3 different packs of 5 disks, all full of the very best clipart for DPaint

Budget, Chequebook, Database, Typing Tutor, Typewriter, Grocery,

PC EMULATOR PACK (P) 3 DISKS £3.15 Turns your Amiga into a PCI Includes the latest PC task which now gives true VGA Resolution (if you have a 1900) and includes 9 disks

of PC Public Domain software. 3 DISKS £3.15

PC EMULATOR PACK 2 (P) Includes the latest PC Task Plus & PC disks containing a French language tuition program. Excellent tutor previously only available

for the PC ANGLIA COLOUR FONTS PACK 1 OR 9 (P) 5 DISKS £5.25 5 disks full of original colour fonts produced here at Anglia. There are 16 colour fonts - not cut and pastel They are produced in the same way as the chisel font supplied with DPaint and the Kara range of commercial fonts! They are typed straight in and work

with Dipaint and TV Text. 5 DISKS £5.25 ANGLIA CLIPART PACK (P) (NEW) Brand new IFF clipart produced by Anglial Loads of high quality anti-aliased IFF images including cats, dogs, birds, wild animals, people and characters. Use

with DPaint or any program that accepts IFF graphics. 4 DISKS £4.20 ASTRONOMY PACK (P) This superb pack now includes: Star Chart, Amigazer, Total

Concepts, Astronomy, Gravity Well, Grav Sim, Orbit, Planet and Fast Facts on the solar system PRINTER USER PACK 2 (P) (NEW) 4 DISKS £4.20

A completely new collection of programs to help you get the best out of your printer! Includes: Diskprint V3.51 (Disk labels), MCMaster (Cassette covers), Printfiles, JBSPool, Enviprint (Envelopes), New Print (Margins - Headers Footers etc.) and more.

DISK EXPERT PACK (P) If you want to learn more about your Amiga, get this pack! - You'll

be a disk expert in no time! Includes Power Packer (Easy file compacter), Sid (Brilliant CLI Replacement Toolf), Iconmania (Change any Icon in seconds), Fixdisk, Viruschecker V5.3, D-Copy (Copies, Repairs, Formats and more), CU Tutorial (All you need to know) and 902 other utilities!!!

"C" PROGRAMMERS PACK (P) 6 DISKS £6.30 A complete "C" language and superb instruction manual provide all you need to learn the "C" language, includes North C (9 disks)

4 DISKS £4.20 MED V3.21 MUSIC PACK (P) MED is widely recognised as the best music package, PD or otherwisell. This pack contains V3.91, the latest version complete with loads of digital samples, a disk full of MED music scores and some great MED music to load and play! Listen to what your machine is capable off

CLASSIC GAMES PACK (P)

and the C Manual (4 disks)

5 DISKS £5.25

An incredible collection of superb commercial quality arcade games) Hours of fun for both kids and adults. Includes Defender, Galaxians, Scramble, Missile Command, Pac-Man, Bi-Planes, Drip!, Space Invaders, Asteroids, Breakout, Tetris + morel

£3.15 | CARD + BOARD GAMES 2 (P) 4 DISKS £4.20

> Another outstanding collection! 38 very good "Thinking" Games!: Chess V2, Backgammon, Blackbox, Towers, Pipe, Zerg, Maze, Connect4, Dominoes, Draughts, Othello, Go Moku, Dragon Tiles, Klondike, Canfield, Mastermind, Wordsearch, Hangman, Pontoon

> COMPUGRAPHIC FONTS PACK 1 (P) 3 DISKS £3.15 36 Scaleable Compugraphic fonts on 3 disks. They work with Workbench 2 or 3, Pagestream V2+ (on any Amiga), Propage 3+

and Pagesetter V2+. Excellent fonts and great value for money! HARD DISK PACK 9 (P) 3 DISKS £3.15 Great collection of the latest hard disk utilities includes HDclick (menu

maker), fileminder (directory etc.), a backup (superbl), superlock (password protect every drive, mouse and keyboardl!), disk optimizer, copier, virus killer and more! AGA PICTURE PACKS 1,2 OR 3, EACH PACK5 DISKS £5.25

3 different packs of 5 disks full of stunning pictures that show off the enormous graphical capabilities of the new AGA machines. You must have an Amiga 1200 or 4000.

A1200 PACK (A1200 ONLY) 3 DISKS £3.15

All of the essential software for your A1200! Includes: Fake Fast MEM, A1200 Run, Degrader, Sysinfo, Viewtek, Plasma, Winblend, Kill AGA, Tetris AGA and more! Also includes the stunning Lyapunovia.AGA create wonderful patterns and pictures with full

5 DISKS £5.25 A1200 SLIDESHOW PACK (A1200 ONLY) Stunning hand drawn Aga artwork! Includes Ferran, Aga, Keith Rhodes, Cynostic and Nightbreed.

PLATFORM PACK (P) All of the best games in the style of Sonic and Mario Bros. If you like those games then you'll love these ! Includes: Wizzys Quest, Wonderland, Wibblygiddy, Doody, Crazy Sue II, Roach Motel, Son

HOME BUSINESS PACK (P) 4 DISKS £4.20 Designed especially for newcomers to business software, this pack contains a database (BBase), spreadsheet, accounts package and Wordprocessor (QED). Also included are a 12,500 word spelling

checker and a word statistics program HOME BUSINESS MANUAL (P)

Approx 50 page professionally printed manual containing full instructions for the Home Business Pack . Includes a specially written guided tour section that takes you through the major features of each program and ensures that you can use each program with confidence!

SINGLE DISKS AT ONLY £1.05! BUSINESS

B391 (P) Amigafox (English Desk Top Publishing)

of Blagger and More II

B322 (P) 600 Business Letters (Superb! - Ready to use) B397 (P) Text Engine V4 (now the very best wordprocessor with built-in 36,000 word spell checker!) B347 (P) Address Print V3 (easy to use address label printer)

B335 (P) Forms Unlimited (Design invoices etc, quickly) 8339 (P) A-Graph V2.0 (new version - easy graphs!) B348 (P) Easy Calc (The best Spreadsheet yet!) B349 (P) Amiga Diary (Easy To Use Diary)

Printed Booklet with details of Hundreds More Disks Just £1.00

ARCADE PACK (P) 4 DISKS £4.20 Our latest collection - The very best Arcade style games in the

whole of PD. You'll play these over and over again! Includes: Cybernetix, Hellzone, Galaga, Nebula, Tanx, Defenda, Oblivion, Intruder Alert, Blizzard.

UTILITIES

U437 (P) D-Copy V3.1 (Latest disk copier!) U478 (P) Typing Tutor (Newl Great features) U495 (P) Virus Checker 6.33 (latest virus killer) U496 (P) Messysid V2 (Reads and writes PC disks) U4028 (P) Printer Drivers (Over 100 - Most Star + Citizen models including colour and HP500C!)

U4036 (WB 2/3 only) Kick 1.3 (lets you use WB1.3 software. U4038 (P) DPaint tutor (easy route to Pro Graphics) U4043 (P) Superdark (New screen blanker) U4054 (P) Disk Manager III (the finest disk catalogue prog.) U4057 (P) Engineers Kit (A health check for your Amigal) U4061 (P) (2 disks) Dice C (Full C Compiler) U4062 (WB 2 or 3 only) N Comm 3 (Latest comms package) U4065 (P) Pools Wizard (Bang up to date forecaster) U4067 (WB2/3 Only)Forecaster (Horse Race Prediction) U4068 (P) Spectrum Emulator V1.7 (Works Immediately!) D139 (WB3 only) Planet Groove (stunning AGA Demol)

G6036 (P) Total War (Perfect version of The Risk board garne) G6042 (P) Super Pacman 92 (the best ever) G6051 (P) Bridge (Card game - A1200 version included) G6053 (WB 9/3 only) GNU Chess (Best chess game) G6056 (P) Cash Fruit (probably the best fruit machine everl) G6061 (P) Artillerus (Like Tarix but Better - Great Fun I) G6064 (P) Solitaire Sampler (5 Full Versions of the Card Game I) G6066 (P) (2 Disks) 18th hole (The best golf game available I) G6070 (P) Kungfu Charlies (Excellent Beat Em Up) G6071 (P) Lemmingoids 2 (Asteroids + Lemmings = Brilliant) G6072 (P) Tetris Pro (Great Looking Tetris) G6073 (P) Megaball 2.1 (Latest Breakout - V.Goodl) G6074 (WB3 only) (2 disks) Motorola Invadas (AGA Space Invadas) CHILDRENS

C712 (P) Colour Pad (New colouring book for youngsters) C720 (P) Colour the Alphabet (education for 4ys+)

C726 (P) GCSE Maths (Great revision disk) C727 (P) Top Secret (platform game) C729 (P) Counting Fun (4+, sums practice)

C730 (P) Wizzys Quest (Wizard, Damsel + Monsters, great gamel) C736 (P) (2 Disks) Asi Back To Skool (Good Educational Games)



DESKTOP VIDEO PACK Q (P) (100%) 4 DISKS

£4.20

Probably our best pack yet! Provides everything to start you off in video. S Movie for Smooth scrolling titles using any font of any size: Showiz for slideshows with loads of wipes and fades: A-Graph for business videos: Shadlow Maker to add shadlows and ismooth any font: Video Librarian: Video Tools: Video Tests: Loads of fonts and morell

DESKTOP VIDEO PACK 2 INSTRUCTION MANUAL!!! (P)

£2.99

A 50 page instruction manual for DTV pack 2. Professionally printed, contains instructions for all the programs in the pack and a section on fonts and how to use them! Also includes a superb guided tutorial that takes you through the major programs step by step. letting you create your own titles as you go! Designed for beginners and experienced users, this manual will make desktop video easy!

FRED FISH CATALOGUE DISK -350 TO 930 JUST 70P

SEE PRINTED BOOKLET FOR DETAILS

HIGH QUALITY HARDWARE

8mm High Quality Mouse Pad £2.99 £3.99 Amiga 500/500+/600/1200 Dust Covers . Phillips 8833 Monitor Dust Cover. £4.99 3.5" Disk Drive Cleaning Kit £2.99 Printer Stand (fits all Dot Matrix Printers). £5.60 Blank Disks (high quality with labels). £0.50

ANGLIA PUBLIC DOMAIN LIBRARY (Dept ASH), 30 Victoria Street, Felixstowe IP11 7EW



PHONE

PHONE WITH CREDIT CARD OR SEND CHEQUE/PO (PAYABLE TO A.P.D). PLEASE ADD 60P (PER TOTAL ORDER) FOR P&P.



*An asterisk by a library's name means see its advert in this issue for further details.

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea, SA5 7EH.

*Amiganuts United, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

*Anglia PDL, 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW, \$\pi\$ 0394 283494.

*Anim1 PD, 2 Fatherwell Avenue, West Malling, Kent ME19 6NG.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Artman, 40 Northwell Gate, Otley, West Yorkshire LS21 2DN. Phone 0943 466476.

Asgard PD, 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW. Phone 0924 363059.

Beats Brothers, 6 Brownings Close, Pennington, Lymington, Hampshire SO41 8GX.

Belshaws PD. 55 Baldertongate, Newark, Notts. NG24 1EU, = 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN, \$\pi\$ 0535 667469.

BTK, 7 Callander Road, Catford, London SE6 2QA = 081 473 1650.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN, \$\pi\$ 0484 516941.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD. Free, non-profit-making PD, membership £5 per year. Contact Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB, \$\pi\$ 0492 533442.

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 OPE. \$\pi\$ 021 779 6368

*CP PD, 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 OEJ, ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL, ₱ 0709 829286.

Crazy Software PD, 50 Woodville Court, Portobello, Wakefield, West Yorkshire WF2 7DU.

*Diskovery PD, 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ, ☎ 0274 880066.

Eurodisk PD, PO Box 2, Radlett, Herts WD7 8QL.

*Express PD, 47 Aberdale Road, West Knighton, Leicester LE2 6GD, = 0533 887061.

*Five Star PD, 48 Nemesia Road, Amington, Camworth B77 4EL. \$\pi\$ 0827 68496.

*GVB PD, 43 Badger Close, Maidenhead, Berks. SL6 2TE, # 0831 649386.

Haven Computing, 15b Meeching Road, Newhaven East Sussex BN9 9RL, ≠ 0273 513491

Highland PD. Free list contains lots of education, business and games disks. Contact David Paulin, 255 Drumrossie Avenue, Inverness IU2 3SX \$\pi\$ 0463 242431.

ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT, ☎ 081 346 0050.

Judge Dredd's PD, 1 Nottingham Road, South Croydon, Surrey CR2 6LN.

*Kew=II Collection, PO Box 672, South Croydon, Surrey CR2 9YS, \$\infty\$ 081 657 1617.

*KT's PD. 75 The Drive, Rochford, Essex SS4 1QQ, © 0702 542536.

Langham PD. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WV8 1PL

Logic PD, 8/5 Glenalmond Court, Sighthill, Edinburgh EH11 4BE.

Magnetic Fields, PO Box 118, Preston, Lancashire PR2 2AW. ☎ 0772 881190

NBS, 1 Chain Lane, Newport, Isle Of Wight, PO30 5QA, \$\pi\$ 0983 529594.

*NJH Computers, 12 Meesons Mead, Rochford, Essex SS4 1RN. • 0702 546796.

Numero Uno. Contact Dillon Eyre, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP, © 0262 671125.

Orbital Software. Contact A
Flowers, 37 The Orchard, Market
Deeping, Peterborough, Cambs.
PE8 8JR, = 0778 342064.

Penguin Public Domain, PO Box 179, Reading, Berkshire RG3 3DD.

*PD Soft, 1 Bryant Ave, Southend-on-Sea, Essex, SS1 2YD, = 0702 466933.

Premier PD, 45 Fairfield Gardens, Eastwood, Leigh-on-Sea, Esses SS9 5SD, ☎ 0702 520520

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN, # 0734 452416.

Roberta Smith DTP, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE, 2 081 455 1626.

Scribble PD, 14 Woolner Close, Barham, Suffolk IP6 ODL

*SeaSoft Computing, The Business Centre, 1st Floor, 80 Woodlands Avenue, Rustington, W. Sussex BN16 3EY. # 0903

850378.

Sector 16, 160 Hollow Way, Cowley, Oxford, ≈ 0865 774472.

17-Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire WF1 1DH. Phone: 0924 366982

Startronics, 4 Arnold Drive,
Droylsden, Manchester M35 6RE,
\$\pi\$ 061 370 9115.

Tazmania PD. Contact M Hewson, 4 Boultham Avenue, Lincoln LN5 7XZ, ≈ 0522 538706 (after 6 pm).

Telescan Computer Services, Handsworth Road, Blackpool FY5 1SB, ☎ 0253 22296.

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ, \$\pi\$ 091 587 1195.

Virus Free PD, 31 Farringdon Road, Swindon, Wiltshire SN1 5AR ☎ 0793 512321

*Visage Computers PDL. 18 Station Road, Ilkeston, Derbyshire DE7 5LD, ☎ 0602 444501.

Your Choice PD Library, 39 Lambton Road, Chorlton-cum-Hardy, Manchester M21 1ZJ. Phone 061 881 8994.

BUYER BEWARE: The inclusion of a PD library in this directory does not imply that Amiga Shopper endorses or recommends any PD library in any way. We can accept no responsibility for any dealings you may enter into or for any difficulties you may encounter.

 When you write to any of these libraries for a catalogue, include an SAE for its return. Some libraries ask that you send a blank disk as well.

 If a library is named in a review, this means that that library provided us with the disk reviewed.
 Given that PD can be freely copied, the same program may well be available legitimately from several libraries.

 If you run a PD library not listed here and wish to be included, or if you want to amend any information given, send full details and a copy of your latest catalogue to: PD Directory, Amiga Shopper, 30 Monmouth Street, Bath.

30 Monmouth Street, Bath, Avon BA1 2BW.



FIVE STAR

QUALITY SOFTWARE: WE STOCK OVER 3000+ DISKS

FREE

CATALOGUE WITH EVERY ORDER OR JUST SEND 2 X STAMP TO COVER POSTAGE & WE WILL SEND YOUR FREE CATALOGUE BOOKLET



We also stock:

FRED-FISH 1-890 T-BAGS 1-57 L.S.D docs 1-39 SCOPES 1-220 ASSASSIN 1-115 Glamours etc.

GAMES

G001-17 + Games (1-17) G018 + Family Fun 1 (A) G019 + Wet Beaver Games G077 + Jeopards (A) G079 + Pac-Man 87 (A) G081 Star Trek ng G084 + Yelp (A) G085 + Rogue Trooper G088 + Tricky Turn (A) G091 + Viking Childs G092 The Simpsons (A) G094 + Return to Earth (A) G096 + Popeye (A) G097 + Plotting (A) G102+ Pipelines (A) G106 Dragontiles (A) G109 + Bug Buster (A)

G112 + Cubulus (A) G127 + Defenda (A) G138 + Peter Quest (A) G153 + Sealance (A) G158 + Waste Lands (A) G166 + No Mans Lands (A) G172 + Dungeons Durlan G174 + Power Games 1

G110 + Mysterious World

G175 + Revenge Camel (A) G215 + Scrum Haters (A) G222 + Mega 21 Games (A) G223 + Survivor (A) G224 + Adam Family (A) G235 + Dragon-Cave (A)

G236 + Space Poker (A) G237 + Scrabble (A) G240 + Quadrix (A) G242 + Take Em Out (A) G245 + Chrome (A) G252 + Super Pac 92 (A) G256+ Insider-Club (A)

G259 + Crystal Caverns (A) G620 + Property Market G265 + Subculture (A) G266 + Trucking (2) G269 + Mental Images 1 (A) G270 + Mental Images 2 G272 + Tank Battle (A)

G274 + Mr Dug (A) G275 + Fruit Machines (A) G278 + Arcadia (A) G293 + Game Galore (1-13) (A) G302 + Bounty Hunter G303 + Dimension X (A)

G305 + Squats Revenge (A) G326 + Mega Game Col III (A) G329 + Madonna Nude Puz (A) G331 + Gravity (A) G333 + Cyber-Netic (A)

G334 + Donkey Kong G335 + Crazy Sue II (A) G339 + Dr Mario G342 + S. Skoda Challenge (A)

G344 + Star-Trek (A) G350 + Raid III (A) G351 + Caverunner (A) G356 + Wonder Land (A) G361 + China Challenge II (A)

G362 + Deluxe Pacman (A) G366 + Bingo Caller (A) G367 + Card Games (A) G372 + Game-Boy Tetris G373 + Air Ace II (A)

G374 + Super Twintris (A) G380 + Shoot Em Up (A) G385 + Billy the Dragon (A) G389 + Casino Games (A)

G390 + Tetren (A) G392 Strikeball (A) G393 + Bubble Ghost (A) G400 + Fighting Warrior (A) G401 + IFF2PCS (A)

G403 + Castle Normis (A) G406 + Total Wars (A) G409 + Wot it Name Quiz G410 + Fatal Mission (A)

G411 + Battle Car 2 (A) G417 + 22 Puzzle Games (A) G422 + Serene II (A) G435 + Roulette (A) G436 + Airport

G437 + Jumpy G438 + Trailblazer (A) G443 + Olympiad Disk (2) (A) G446 + Oblidox (A)

G449 + Empire (2) G453 + Fire Fighter (A) G455 + Castle of Doom (A) G458 + Technotron (A) G460 + Wibble World Giddy (A)

G465 + Chess II (A) G474 + Top of the League (A)

G478 + Amos Cricket (A) G484 + Match Stick Man (A)

COMPATIBLES NOTE

(WB1.3) A500 any disk A500 Plus (WB 2.0) with a (+) with a (+) A600 (WB 2.0)A1200 (WB 3.0) with a (A) CDTV/A1500/A2000 etc, check for (Kickstart) that matches one of the top

Amiga...Ok. () means number of disks.

OVERSEAS TRADERS

who wish to become Official Five-Star PD Distributors. Please write to us.(limited)

U001 + A-GENE (A) U002 + System Tester (A) U007 + Text Plus 2.2e (A) U016 + Home Business 2 (6) (A) U023 + Banking (A) U029 + Can Do (1Mb) (A) U031 + C-Light (1Mb) (A) U033 + Cross Dos (A) U046 + Darkstar (2-5) (A) U058 + Mag Creator (A) U059 + Disk-Salvage (A) U088 + Label Designer (A) U101 + Data Base/Cat (2) (A) U118 + North C (2) (A) U121 + Spread Sheet (A) U131 + Tetra Copy (A) U137 + Uedit (A)

U140 + Virus Killer (A) U144 + Amiga Fox DTP (A) U145 + Xcopy Professional (A) U146 + C-Manual (4) (A) U150 + Work-Bench Hacks (A) U153 + Assasign Printer (A) U160 + 600 Business Let (A) U169 + Paint and Animate (A) U170 + Biorhythm V4.01 (A) U177 + Electro-Cad V1.4 (A) U181 + Video Note Pad (A) U186 + Ultimate Disk Creator (A)

U191 + SID II(A) U195 + Amibase-Pro II (A) U198 + Scenery (A) U220 + Amos-Paint (A) U226 + 50 + Most Used Util (A) U229 + Slide Const Kit (A) U231 + The Game Tamer (A) U233 + Speech Toy (A) U237 + 8 Channel S'Tracker

U242 + Imploder 4.0 (A) U250 + Video Tool (3) (A) U255 + Graphic Converter (A) U261 + Jam Disk (1-10) (A) U284 + Copy & Crack Tool (A) U287 + P.C. Q Pascal (2) (A) U300 + Messy Sid II (A) U311 + Power Logo (A)

U313 + Printer Utility 3 U321 + Graphic Util (6) (A) U331 + Power-Menues (A) U332 + Graphic Const Kit (A) U334 + Emulator Col II (A) U335 + Free Copy (A) U337 + Model 3D (A)

U338 + Multi Visions 1 (A) U339 + Multi Visions 2 (A) U343 + Little Office (A) U350 + Pool Tool (A) U352 + Desktop Video (A) U356 + Text Engine V3.4 (A) U357 + Bon Appetit (A)

U358 + Star Cat 2 (A) U363 + Disk Repair Kit (A) U364 + Home Account (A) U368 + Amicash (A) U370 + Caption Machine (A)

U372 + Word Sort (A) U376 + NCOMM II (A) U377 + NCOMM III (A) U383 + Lyapunov Generator (A)

U390 + Data Base Pack (A) U391 + Fortran Language (A) U394 + Protraker Vs 2 (A) U397 + Form Unlimited (A) U398 + Mortgage Calc (A) U399 + Fracscape V1.2 (A) U401 + Plus 1 Issue (1-14) (A)

U420 + Speed Bench (2/3) (A) U424 + Slidemaker (WB2/3) (A) U425 + NIB 2 (A)

U427 + Printer Studio (A) U430 + Sound Monitor (A) U431 + Video Apication (2) (A) U434 + Oracle (2) (A) U442 + Sysinfo 2.56 (A) U444 + Font Form (A) U466 + Grape Vine 12 (3) (A) U477 + Quatermass Exp (2) (A)

U480 + Hard Disk Click (A) U491 + Protracker V3 (3) U495 + Hard Disk Util (A) USO5 + Salvage/Repair Kit (A) U507 + DCopy 3 Proff (A)

U509 + Ultimate Btblock 1 (A) U513 + Video Titler A (2) (A) U516 + Amos Fractal (A) US50 + Scenery Const Kit (A) U551 + Assassin Boot Block (A)

U555 + Crossword Creator U558 + Graphic Const Kit U567 + Text Plus V.4 (A) U568 + Icon Const Kit (2) (A) U580 + Picture Box (A)

US81 + Magnetic Pages (A) U584 + New Super Killer (A)

> For latest catalogue disk please add 70p. (Europe add 25p per disk for P&P) (worldwide add 50p per disk P&P)

PRICE & HOW TO ORDER

MAKE P.O or CHEQUES payable to: FIVE-STAR PD. Send to:

A001 Walker 1 & 2 (2) (A) A004 + Porky Pig (AGA) A005 + Fillet The Fish (A) A007 + Franklin the Fly (A) A008 + Tron (2) (AGA) A010 + Sculpt Anim 1 (A) A013 + Space-Probe (A) A017 + S.T. Fleet (A) A019 + Stomp Logo Anim (A) A021 + Coyotes Strike Back

A022 + Luxo Teenagers (A) A025 + Cool Cougar (A) A028 + Puggs in Space A029 + Mike Tyson (A) A033 + Fractal Flight (A) A036 + Weird Science I (A) A037 + Weird Science II (A) A038 + Batman Movies (A) A039 + Newtek (2) (A) A051 + Dating Games (3Mb) (2)

A056 + Juggette II (1Mb) (A) A059 + Pogo (1Mb) (A) A060 + Walker 1 (2Mb) (2) (A) A063 + Juggler II (A) A064 + Newtek III (2) (A) A066 + DBW Render (A) A068 + Walker 2 (2) (A)(2M) A070 + Donald Duck

A072 + Life a Bitch (18) (A) A073 + Its Mental III (A) A082 + Its Mental I (A) A108 + Another World (A) A115 + Vietnam Conflict (A) A138 + Kylies A (20) (A) A141 + Terminator 2 (A)

A150 + Modonna (A) A151 + Top Gun (A) A153 + Gulf Tribute (A) A154 + Thunderbirds (A) A155 + Rock Album (A) A157 + Watership Down (A) A158 Garfield (A) A175 + Madonna SS II (AGA) A178 + Kim Wilde Slides (A)

A179 + The Living World (A) A187 + Peril of the Deep 1 (A) A188 + Peril of the Deep 2 (A) A190 + Terminator II (2) (A) A193 + Nemisis Comic (A) A195 + Real 3D (2) (A) A197 + Star Trek (2) (A) A200 + Mars Flights (A) A202 + Fractal Anim (A) A205 + Planet Side (A) A207 + New Lemmings

A208 + Lady & the Tramp (A) A209 + Mr Potatoes (A) A211 Copter Flight (A) A213 + Cannon Flight (A) A215 + Madonna III (3) (A) A218 + More Areotoon (A) A220 + Showbiz Anim A221 + James Whale Anim

A225 + 5 Way Kill Mole 2 (A) A226 + New Viz (A) A230 + Too Much 3D (A) A231 + Aliens (A) A232 + Beach Flight 1 & 2 (A) A236 Whizzer & Chip (A) A241 + Super Pic (1-3) (A) A250 + Channel 42 A252 + Space Flight Anim (A) A255 + Bart Simpson (3) (A)

A258 + Creep Show (A) A260 + Freddy Dead (A) A262 + Star Trek (A) A265 + Let Me Out 1 & 2 (A) A266 + Colour Cycle A280 + Gif 1 & 2 (2) (A) A288 + Saturn Fly By (A) A289 + Reflection (A) A290 + Christmas Anim (A)

A293 + Manga Comic (2) (A) A296 + Cyclic Art (AGA) A299 + Eric Schwartz (A) A300 + Vista Pro (2) (A) A302 + Cat Slideshow (A) A306 + Tornado (AGA) A311 + Colour Demo (A)

A314 + Scenery Anim (2) (A) A317 + Rocking Robot (A) A320 + Gore (AGA) A334 + Dolphin Dream (A) A372 + Rodens Anim (2) (A) A375 + Moonshine (2Mg) (A)

A376 + 6 of 1 Prisoner (A) A377 + Eight Slenz Out (2M) (A) A378 + Sweet Revenge (2M)(A) A379 + Predator (2) A383 + Adventure Oscar (A)

STAR TREK anim Agatron Vol 1-38

D001 + Space Ace (A) D008 + Predator (A) D011 + Multitasking (A) D013 + Fraxion Revenges (A) D016 + Dead Dance Thrash D029 + Budbrain Mega (2) D033 + Phenomena (A)

D035 + Thames TV Demo (A) D050 Pink Floyd (6) (A) D062 + Predators (2) (A) D068 + Sam Fex Bibs Bobs

D076 + Contact Been Made (A) D078 + System Violation (A) D120 + 1911 Voyage D152 + The Electric Touch D154 + Virtual Real (2) D156 + Kylies Demo (2) D163 + Harlequin Demo (A)

D168 + Silence of the Lamb (A) D180 + Cheap Movies Clip D188 + Peace of Mind D190 + Software Failure D201 + Farts Demo (A)

D203 + Hidden Demo (A) D205 + CDA Limelight (A) D218 + Scream (2) D225 + Deluxe Video III (2) D234 Silence Expose (2) D236 + Deluxe Photo Lab (2)

D240 + Anarchy

MUSICE

M001+ Beasty Boys (A) M002+ Michael Jackson (A) M003+ Do the Bartman (A) M005+ 100 C64 Tunes M018+ The Xmas Song (2) (A) M020+ Laurel & Hardy (2) (A) M025+ Money for Nothing (A) M026+ Walk on the Way Remix (A). MO29+ Safe Sex Demo (A) M031+ Betty Boo(2) (A) M040+ Secret PMs Ball (2) (A) M058+Sgt Pepper Disk (2) (A) M062+ The Rainbow Demo (A) M063+Chubby Brown (A) M072+Madonna (A) M076+ Popeye (A) M084+C64 Games Music (A) M093+ Miller Lite (A) M107+Flash Gordon (2) (A) M115+Mahoney & Kaktus 2 (A) M122+ The Yello Mix (A) M123+Home & Away + Bread (A) M125+ Addams Family (A) M131+Kefrens Megamix (A) M147+Bangle (A) M150+Tiffony (A) M153+Xmas Music Col (A) M154+Kylies (2) (A) M156+CD Player (A) M158+DoctoringTardis (A)

M160+ I am too Sexy (2) (A) M168+Rocks 'n' Roll (A) M171+Madonna (Virgin) (A) M177+Pet Shop Boy 4 Tune (A) M184+Samfox (Please Me) (A) M186+Madonna (Rescue) (A) M188+Joe Le Taxi (A) M194+Jesuc One's (2) (A) M230+Now Music (1-15) M262+A to Z C64 Tunes (4) (A) M274+LSD Techno Warrior (A) M276+Vivaldi 4 Seasons

E001+ Kids Paint (A) E002+ Colour It (A) E003+ Treasure Search (A) E004+ Learn & Play I E005+ Learn & Play II E006+ Spanish Translator (A) E007+ Education Graphics

E008 Mr Men E009+ Astronomy (A) E010+ Simon & Space Math (A) E011+ Education Disk 1 (A) E012+ Education Disk 2 (A) E013+ Education Disk 3 (A) E014+ Education Disk 4 (A) E015+ Education Disk 5 (A)

E016+ Education Disk 6 E019+ Dinosaurs (A) E020 World Database E021+ Story Land II (A) E022+ Language Tutor (A) E023+ Talking Colouring (A) E024+ Easy Spell II (A) E025+ Scrabble (A) E026+ Words (A)

E027+ Oswald (A) E028+ Ariochs Astrology (A) E029+ Ariochs Astrology (A) E30+ Evolution (A) E31+ IQ Test + IQ Games (A) E33+ Keyclick II

E35+ Chess Helper (A) E36+ Basic Tutor (A) E38+ Amiga Tutorial (A) E39+ Postman Pat (A) E40+ Guide to Back Pain (A) E41+ Kid Alphabet (A) E42+ Fraction & Sliquest (A) E43+ Math Master (A)

E44+ Steam Engine V2 (A) E45+ Petrol Engine (A) E46+ Gas Turbine Engine (A) E50+ Dream for Angels (A) E51+ Invisible World (A) E52+ Fish Tank Sim

E54+ Demolit Mission (A) E55+ Word Power (A) E56+ Worm Hole (A) E57+ Apple Catcher (A) E58+ Maze & Crypok (A) E59+ Verb Quiz (A)

E61+ King James Bible A (A) E66+ Tarot A (A) E67+ Tarat Disk (A) B E68+ Gallow (A) E69+ Treasure Trap E70+ Math Drills (A)

E71+ Error Info (A) E73+ Picture & Letter (A) E74+ Amiga Begin Guide (A) E75+ World War 2 (A)

CA01+ Colour Cartoon C015+ FS Clipart (1-5) C024+ Harlequin Vol1 C025+ Harlequin Vol 2 C026+ Harlequin Video 1 C027+ Dynamite Fonts 1 C028+ Amsoft Font Clip 1 C029+ Amsoft Font Clip 2

C030+ Various Fonts C031+ Exile Font Clipart C032+ Disney Clipart C033+ Cosmic Clipert C034+ Space Clipart C035+ Gelenite Fonts (3) CO43+ Rip-Font & Logo CO44+ Colour Clip Art 1

C051+ Clip Art Vol (1-20)

C101+ IFF Pic Clipart (1-24)

F001+ F5 Font (1-5) F015+ Deluxe Paint Font 1 F016+ Deluxe Paint Font 2 F017+ Deluxe Paint Font 3 F018+ Deluxe Paint Font 4 F020+ Hak Font (3) F023+ Computer Eye Font 1

F024+ Computer Eye Font 2 F025+ Fancy Font Volume 1 F040+ Digi Font Volume 1 F045+ Mega Font Volume 1 F050+PS Logo Font (1-9) F070+ Pagestream Font (1-6)

S001 Sample ST Vol (1-50) \$151 Mega Modules (1-6) 5171 House Samples A \$172 House Samples B 5173 House Samples C 5174 Noise Less, Mozart \$175 Korge Sample (3) \$201 ST Modules (1-40) \$401 NT Modules (1-3) 5501 Instrument (1-5) 1

C64 EMULATOR Vs 2

& 50+ original C64 Games Pack The very latest C64 Version 2 Emulator. Now you can even program it just like the C64 computer. SUPERB VALUE PACK ONLY £4.99

ZX SPECTRUM 48K

& 50+ original Specy games packs This is the very latest version (1.7) now runs much faster & includes sound. You can even program it like the original ZX-SPECTRUM 48K BRILLIANT. ONLY £4.99 ALL AMIGA

(please state)

Games Compilations pack only £12.99

Super value 101 great games, pack includes CRAZY SUE, INVADER II, TETRIS ELECTRIC TRAIN, MONOPOLY and 96 more great games etc. Suitable for all ages & for all Amigas

30+ GAME PK 1 OR 2 ONLY £3.99 EACH

Games are same quality as above For all ages and for all AMIGAs

ASSASSIN GAMES PACKS Vol 1-115

Very highly rated games compilation, has been reviewed in most Amiga magazines. Each disk contains between 2 to 8 very high quality games. For full list of the ASSASSIN games please order a CATALOGUE disk.

ALL AMIGA (order by disk no eg.. Ass 93 for Assassin disk 93)

SPECIAL PACK...FOR ALL AMIGAS

MANGA ARIKA (6 disk) NEW only Brilliant MANGA games anim demo (6 disk)
D-PAINT FONTS pack 1, 2 or 3 only £4.
150+ QUALITY IFF FONTS. 4 DISKS PER PACK FS LOGO FONTS pack 1, 2 or 3 only ideal for logo headlines. 4 disks per pack. QUALITY D.T.P CLIPART (5 disks) £4.95 1000s of high quality images (5 disk) PAGE STREAM FONTS (6 disk) only £5.95 Why pay more for quality fonts.
C.G. FONTS (for all major D.T.P) (7 disk) £6.95 Another 7 disks quality C.G fonts. 48 HIGH QUALITY PAGESTREAM CLIPART only 99p per disk. Load into P. Starems.

Latest releases FOR ALL AMIGAS

E074 SCIENCES VOL 1 (4 disks) Excellent collection of SCIENCE, PHYSICS & CHEMISTRY programs.

E084 ASTROLOGY PACK (4 disks) Find star, galaxy etc position . A must for ASTROLOGY fans. G490 MEGA BALL 2 (Just released)

Brilliant breakout clone MEGABALL v2 and load of new features. G494 EXTREME VIOLENCE (new) Fantastic 2 player duel shoot-em-up set in a

future city. U622 ACTION REPLAY V4 (A1200) Freeze, copy, rip gfx & music, infinite lives, MC

Monitor etc. U633 CHEAT COMPENDIUM (new) NEW cheat & compete solution for 452 (old & new) games

U637 DISKS REPAIR KIT II repair, salvage & copy for hard disk & floppy disk. U639 DISK SALVAGE V2 (latest) New..salvage program etc from damaged HD &

floppy disks. U640 HOW TO CODE IN C (2 disks)

New., teach you how to program the C language (tutor).

U651 C-MANUAL 3 (12 disks) (latest)

U645 PC EMULATOR 2 (new) V2.3 PC emulator now with 256 VGA colour on your A1200 U650 COPY & CRACK TOOL 2 (new)

New compilation copy tool for back-up software.

Latest manual vs3 better than learning from books.

EDUCATION &

ONLY £4.95

21 GAMES Our best seller. Best of education & 21 games (5 disk) (FOR ALL AMIGAS)

MAKER 1& 2 5 disk set, the best demo maker yet! (ASOO 1.3 only)

R.S DEMO

ONLY £4.95 Extra font & logo disk available.

THE ABOVE IS ONLY A SMALL LIST OF THE TITLES AVAILABLE. PLEASE ORDER A CATALOGUE DISK

Prices 99p per disk Postage 70p per order

FIVE-STAR (dept AS11) 48 NEMESIA AMINGTON TAMWORTH B77 4EL ENGLAND TEL: 0827 68496

We open 7 days a week

and all orders are same day

despatch.

FREE

M293+Bach Concerto 5/6 (A)

M318+Madonna Immaculate Col (A)

M314+Dick Tracy (2) (A)

M317+Freddy Rapp (A)

COMPETITION (FREE ENTRY WITH EVERY ORDER)

monthly price draw until February. The first three customers orders picked out of the box will win. 1ST PRIZE

CUBMAN DISK DRIVE

2ND 40 PD DISKS VOUCHER

3RD 25 PD DISKS VOUCHER

We recommend the disk catalogue as it contains a full description of over 3000+ disks & a special offer & free SYS INFO program.

DISK CATALOGUE

Add 70p with order or send 3 x 24p stamps.

SYS NFO ... Gives info on your Amiga set up, check all drives, ram, hardware & speed check etc, very USEFUL test to determine how healthy your Amiga is. Brilliant. WE ALSO HAVE FRED-FISH & SCOPES CATALOGUES.

ZX SPECTRUM 1.7 EXTRA GAMES DISK lust in four new original ZX Spectrum

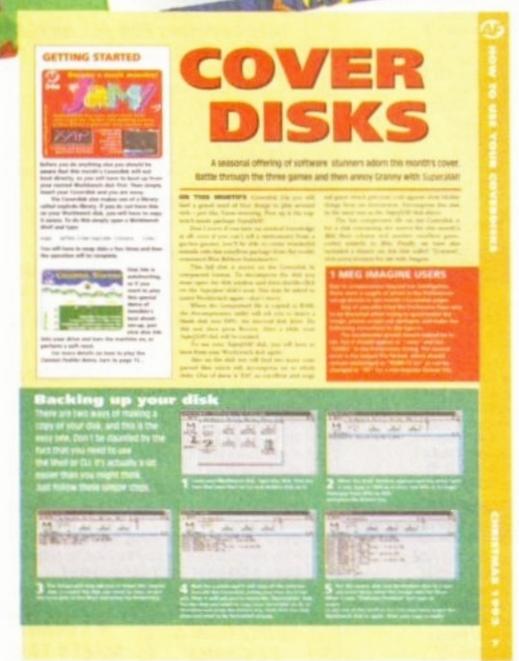
games disks for the ZX Spectrum emulator 1.7. They contain all the great titles, like Elite, Jet-Pack, Wheelie etc. Far too many titles to list. Order code ZX Spectrum Data disk (1-4).



...more

ON THE COVERDISK:

Software's powerful music-making tool - SuperJAM! For the beginner, creating music isn't always easy. But now, with this fully-working program just pick your instrument, choose a style and jam away! In the shops now!





Step-by-step guide on how to make the best music with your Coverdisk

...All on the cover of the Amiga Format

than just a magazine



A CONTROL OF THE CONT

software, SuperJAM!

ON THE SECOND COVERDISK:

CANNON SOCCER – a crazy Christmas demo combines two top games, Sensible Soccer and Cannon Fodder, to create this mad mission-packed footy shoot-em-up.

CAFFEINE FREE – written in Blitz Basic, this great gravitating blaster includes full source code.

XAP – more shoot-em-up mayhem with this demo of an addictive and peculiar Shareware game.

special bumper Christmas issue



The ultimate games creator just got the ultimate guide

If you've got AMOS, then get this book! It explains what AMOS can do, and how to make it do it.

There are sections on program planning, producing 'readable' code, and screen handling.

AMOS is built to handle scrolling, animation, sound and music everything you'll find in a commercial game. And this book, from the makers of Amiga Shopper, shows you how it's done.

If you've got AMOS you're half way to creating your own gaming worlds. Don't stop half way - order 'Ultimate AMOS' today!



Includes a disk containing all the code printed in the book, plus four complete AMOS games!

VE £10!

'Ultimate AMOS' is available on its own at £19.95 but, for a limited period only, you can order 'Ultimate AMOS' and 'Get the Most out of your Amiga 1993' for an all-in price of £29.90. That's a saving of £10 on the combined RRP. See the form at the bottom of this page for ordering details.

Get the most out of your **Amiga**



'Get the Most out of your **Amiga** 1993' yours for only £9.95 when you buy **'Ultimate** AMOS'

FUTURE LEISURE BOOKS

These Amiga Format books are available in all good bookshops right now, but you can also order them direct from Future Publishing - and sending this order form off won't even cost you a stamp!

Please send me: (tick as appropriate)

.....copy/copies of 'Ultimate AMOS' at £19.95 each

[ORDER CODE: FLB025A]

.....copy/copies of 'Ultimate AMOS'/'Get the Most out of your Amiga 1993' double offer at £29.90 per set [ORDER CODE: FLB025B]

Amount enclosed £

Method of payment (please tick one):

Visa Access Cheque P/O

CARD NUMBER

Expiry date:

Please tick here if you do not wish to receive direct mail from other companies:

PRIORITY ORDER FORM

Your signature.....

Now send this form and your payment to:

Future Leisure Books Offer, Future Publishing Ltd, Freepost, Somerton, Somerset TA11 7BR

For office use only:

SCRATCH CODE: AS33

PUBLIC DOMAIN • PUBLIC DOMAIN

Amiga Shopper Buyer's Guide tells you what's hot and what's not in the Amiga market. It's a comprehensive guide to help you make the right buying decisions. We'll be undating it as new products are released. This

month we deal with public domain software. For reasons of space, it may not include every PD package ever produced for the Amiga - for details of the latest products see our regular PD reviews section (see page 111)

	updating it as new produ		the latest products, see our reg		
USINESS SOFTWARE					
rogram	Library	Disk	Туре	Issue	Rating
Master	Fred Fish	Fish 824	Simple Adress book database	27	**
ZSpell	Digitz	Utl277	Spell checker	13	****
ccount Master	Various		Home accounts program	19	****
miBase Pro 3	AmigaNuts		Powerful database	9	****
		V630			***
miCash	PS Soft		Home accounts	16	
ImigaDex	PD Soft	V757	Pop up address book	19	
migaFox	Office Choice	U173	Combine text with graphics	8	**
Atbi	Fred Fish	Fish 746	Unix-like table formatting utility	22	****
BBase III	Fred Fish	Fish 860	Powerful database program	28	*****
BuddBase 1	Deja Vu	L/28	Powerful database program	22	*****
cruiseword	PD Majik		Word processor	16	**
DataBench	Fred Fish	820	Very good PD database	26	****

asyBanker	GTS	Home2	Home finance program	10	
Epoch	NBS	U726	Pop up address book and calendar	22	**
Forms Really Unlimited	PD Soft	V782	Create your own business forms	21	
Iome Business Pack	Anglia PD	HB1	Database, spreadsheet, wp	25	*****
Home Manager	PD Soft	V660	Personal organiser	16	*****
HomeHelp	GTS	Home1	Computerised grocery lists	10	****
-Man	GTS	Home2	Inventory list management		***
				10	
nspire Demo	Fred Fish	815	Powerful word processor	26	*****
CGraph Demo	Fred Fish	Fish 760	Demo of shareware graph program	23	*****
liner	Fred Fish	285	Ideas processor like Flow	10	****
MultiPlot	Fred Fish	467	Data graphing program	7	****
		149	Printer drivers for PageStream	10	****
NewPRT	Digitz			10	
PageStreamFonts	Digitz	149	Fonts for PageStream	10	*****
PaperBack!	Fred Fish	Fish 749	Create printed booklets with ease	22	*****
Philo	Startronics	N/A	Databases for beginners	21	
Power Base	Deja Vu	Licenseware	Database	15	*****
Power Planner	Deja Vu	Licenseware	Diary/telephone book	15	***
PowerSnap	Fred Fish	542	Grab screen text as ASCII file	0	*****
PowerText	Deja Vu	Licenseware	Word processor	18	*****
QuickFile	Fred Fish	820	Absolutely awful PD database!	26	None!
Stock Control 1.0	Deja Vu	L/111	Powerful stock control utility	23	****
TextEngine 3.0	Digitz	277	Word processor	13	***
TextPlus 3.0	PDSoft	V261	Word processor	1	
				-	
UEdit	AmigaNuts	1162	Text editor	8	****
WBase	Anglia PD	U4015	Pop up Workbench database	18	**
WFILE	Fred Fish	776	Convert PC and Mac text files	24	****
Will&Testament	PD Soft	V706	Template for wills	19	*****
Word Power	Deja Vu	Licenseware	Spell checker	17	****
WordWright	PDSoft	V28	Word processor	13	
CDTV Player	Fred Fish	Flsh 759	Play Audio CDs from WB on A570	23	*****
MUCIC LITHITIES					
MUSIC UTILITIES					
CZED	Fred Fish	223	Patch editor for Casio synths	10	*****
Desktop Harp	Various		Collection of tunes	18	*****
PURE STREET CONT. A STREET CO.	Fred Fish	332	Patch editor for Kawaii K1	10	*****
K1 Editor				10	*****
MED 3.11	AmigaNuts	973	Sound Tracker	1	
Module Master	TBAG	58	Play modules in various formats	9	****
Module Processor	AmigaNuts	864	Convert modules to executable	1	***
Nutcracker Suite	17-Bit Software	N/A	Tchaikovsky's Nutcracker suite	21	****
Rippers Disk	17Bit	1055	Rip modules from memory	5	****

Sound Ed	Fred Fish	486	Sample editor	5	
EMULATORS					
LINULATURA					
A64	AmigaNuts	1030	Commodore 64	3	*****
IBEM	VirusFree	1485	PC compatibles	3	****
QL Emulator	AmigaNuts	1030	Sinclair QL	3	***
ST Emulator	Digitz	Utl149	Atari ST	15	***
	The state of the s	1030		3	****
ZX Emulator	AmigaNuts	1030	ZX Spectrum		
VARIOUS UTILITIES					
TARIOUS UTILITIES					
A-Gene	AmigaNuts	933	Genealogy program	1	****
ABackUp	Fred Fish	Fish 759	Hard Disk backup utility	23	****
AIBB	PD Soft	V948	Standard benchmark program	25	*****
ARTM	17Bit	1274	System monitor	7	
				22	
ARestaure	Fred Fish	Fish 760	Restore deleted files	23	*****
AWP	Fred Fish	554	Animate WB2.0 clock pointer	11	****
AniMan	Fred Fish	722	Voice control your Amiga	20	***
Anti-Virus	Soft Expression	U155	Kill those viruses	19	*****
AppiSizer	Fred Fish	Fish 853	Find out size of drawer easily	28	*****
	CIX Download	11011 000	a da 1980 de 1990 de 1995 de 1997 de 1		*****
Arq		1400.100	Improved system requesters	0	
Assassins Handy Tools	Aardvark PD	U186-188	Three disks of handy utilities	23	***
	PD Soft	V685	Astrology program	17	****
	Fred Fish	771	Execute ARexx script at regular intervals	24	****
Astro 22		285	Graphical memory monitor	10	***
Astro 22 AutoSave	Frod Fleb				
Astro 22 AutoSave Avail Mem	Fred Fish		Hard disk back-up utility	20	
Astro 22 AutoSave Avail Mem BackUp	Fred Fish	724			
Astro 22 AutoSave		543	Event scheduler	13	***
Astro 22 AutoSave Avail Mem BackUp Badger	Fred Fish			13 10	****
Astro 22 AutoSave Avail Mem BackUp Badger Banner	Fred Fish Fred Fish TBAG	543 52	Print huge banners	10	
Astro 22 AutoSave Avail Mem BackUp Badger Banner Boot Logo	Fred Fish TBAG Fred Fish	543 52 Fish 754	Print huge banners Display picture during boot up	10 23	****
Astro 22 AutoSave Avail Mem BackUp Badger Banner Boot Logo BootJob	Fred Fish TBAG Fred Fish Fred Fish	543 52 Fish 754 Fish 760	Print huge banners Display picture during boot up Store game bootblocks on disk	10 23 23	
Astro 22 AutoSave Avail Mem BackUp Badger Banner Boot Logo	Fred Fish TBAG Fred Fish Fred Fish Fred Fish	543 52 Fish 754 Fish 760 494	Print huge banners Display picture during boot up Store game bootblocks on disk Reverse mouse buttons	10 23 23 9	:::
Astro 22 AutoSave Avail Mem BackUp Badger Banner Boot Logo BootJob	Fred Fish TBAG Fred Fish Fred Fish	543 52 Fish 754 Fish 760	Print huge banners Display picture during boot up Store game bootblocks on disk	10 23 23	

PUBLIC DOMAIN

Fonts	PD Soft	V713	Lots of Compugraphic fonts	19	
ss 1.1	Fred Fish	579	Make your own cassette covers	13	
ockTick	TBAG	58	2.0-like clock mouse pointer	9	**
mmand.COM	17Bit	866	CLI commands in RAM	2	**
ok & Stitch te2Day	GTS Fred Fish	Fish 826	Learn to cook, stitch and brew beerl	25	
opy	AmigaNuts	700	Tells you day when given date Disk copier	27 10	
afLab	Fred Fish	494	Sign language utility	9	
vRen	GTS	Utils1	Rename devices including DFO	10	
sk Manager 2	Various	-	Disk cataloguing program	20	**
skMate	Fred Fish	754	Powerful Workbench disk copier	28	
skSpeed	GTS	Utils1	Disk drive benchmark program	10	**
stance	Deja Vu	Licenseware	HAM radio utility	20	**
agit	Fred Fish	792	Drag a window without using drag bar	25	**
o Mouse ectronic baby book	Fred Fish PD Soft	778 V658	Make your mouse point where it's going	24	
ements	Fred Fish	593	Record your baby's details Periodic table of elements	16 13	**
stDiskII	GTS	Utils1	Disk optimiser	10	
stIntroMaker	Fred Fish	814	Create your own scolly demos	26	4.5
e & HD Utilitles 6	PD Soft	V978	Selection of file and hard disk utilities	25	**
e & HD Utils 3	PD Soft	V815	Various file and hard disk utilities	21	
e and HD management	PD Soft	V573	Hard drive utilities	15	**
e and HD management 2	PD Soft	V575	More hard drive utilities	16	
eMaster	GTS	Utils1	Binary file editor	10	**
Search	Fred Fish	531	Find files on a hard disk	11	**
er idit	Fred Fish Fred Fish	562	SID clone for Workbench 2.0	11	**
sh Disk	GTS	Fish 731	Search for named files on any disk	22	**
nt Manager	Digitz	Utils2 149	Disk optimiser Manage your bitmap fonts	10	**
tviewer	Fred Fish	Flsh 732	Keep track of all your bitmapped fonts	10 22	
mat 1.1	Fred Fish	535	Replacement disk formatter	11	**
matter	GTS	Utils1	Replacement disk formatter	10	
Time	Fred Fish	Fish 758	World Time Zone Display	23	
bKlck	Fred Fish	Fish 831	Grabs Kickstart ROM to disk file	27	**
phPaper	Fred Fish	Fish 851	Prints graph paper to printer	28	
M Radio	Aardvark PD	-	HAM radio utilities	18	**
MLab 2 Demo	Fred Fish	726	Powerful image processor	20	**
d Drive Special	GTS	-	Collection of hard drive utils	9	**
er n Mania	Fred Fish PD Soft	Fish 853	View AmigaGuide files	28	
loder	Fred Fish	V730 422	Lots of new Icons	19	**
rtLock	Fred Fish	494	File compressor Turn off mouse and keyboard	9	
all 1.2	Fred Fish	817	Workbench Install disk utility	26	
Call	Fred Fish	Fish 854	Load programs via hotkeys	28	
Fisher	GTS		Database of Fred Fish disks	5	
4-200 Fonts	NBS	L503	Fonts for Star printers	8	
	Fred Fish	772	Very powerful Unix-like 'LS' command	24	
el Print	Fred Fish	227	Disk label printer	10	**
elMaker	Fred Fish	548	Create disk labels	11	
kDevice	GTS	Utils1	Better AmigaDOS 'Lock' command	10	**
klt	Fred Fish	798	Password protect your files	25	
SLens cro 1.0	Fred Fish	574	Magnify area of screen	11	
gnetic Pages	PD Soft	786 V688	Record and playback user inputs	24	
n Event	Soft Expression	U149	Create your own disk magazine Event scheduler	17	**
ster Virus Killer	AmigaNuts	971	Virus killer	20	**
gaStation	Five Star PD	U195	More CLI commands	18	
gad 2.0	Fred Fish	Flsh 736	Brilliant SID-like directory utility	22	**
nu Runner	AmigaNuts	1024	Run programs from menu	8	
ssyDOS	NBS	U619	Read and write PC disks	6	**
ssySID 2	PDSoft	V490	Access PC disks with ease	13	**
ix Demo	PD Soft	V711	Demo of Unix-like OS	19	**
se Tutor	Deja Vu	L101	Teach yourself Morse Code	19	**
v Aqua	Fred Fish	Fish 837	Database of Fred Fish library	27	
ePrefs line fonts	Fred Fish	780	Extra WB 2.0 Preference programs	24	
Keys	George Thompson Fred Fish	494	For ProPage and PageStream Manipulate windows with bothers	16	
(er	Fred Fish	Fish 824	Manipulate windows with hotkeys Add page numbers to documents	9 27	
sword	Fred Fish	804	Password protect a hard drive	26	
is Tools	NBS	U725	Pools predictor	22	
UpMenu	Fred Fish	Fish 756	Modified Workbench menus	23	
t	Fred Flsh	Fish 828-830	PostScript interpreter	27	
verPacker Utils	Fred Fish	542	Utilities for PowerPacker	11	**
iter Drivers	PD Soft	V724	Star and Canon printer drivers	19	
at	Fred Fish	788	Display information on CLI/Shell	24	
sk	Fred Fish Fred Fish	Fish 853	Get size of AmigaDOS volumes	28	
ouse BShift	Fred Fish	789 547	Mouse accelerator utility	24	
over	Digitz	149	Select multiple icons Rescue files from corrupt disks	11 10	
Me	AmigaNuts	1186	Run programs from menu	9	
ext	Fred Fish	Fish 760	Create stand-alone text files!	23	
ool TimeTable	AmigaNuts	1100	Generate school timetables	5	*
eenMOD	TBAG	58	Modify screens and windows	9	
NoClick	GTS	Utils1	Turn off annoying drive click	10	**
2	17Bit	5-15-1	Directory utility	16	
gleFile	Fred Fish	Fish 851	Checks hard disk for duplicate files	28	
sh	Fred Fish	791	Unix 'ksh'-like Shell	25	
art Icon	Fred Fish	316	Iconifies windows	10	
ap 1.4	Fred Fish	326	Grab screen text into clipboard	10	
rClock	Fred Fish	814 Fish 925	Display time in StarTrek fashion	26	
perDark	Fred Fish	Fish 835	Modular screen blanker	27	
per Format sinfo	Fred Fish Fred Fish	Fish 835 571	Workbench 2.1-like disk formatter System information program	27	*
	FIGU FISH	UI L	System intomiauon program	11	

PUBLIC DOMAIN

ysInfo 3.11	Fred Flsh		Latest version of system analyzer	26	*****
olsDemon	Fred Fish	561	Run programs for 2.0 Tools menu	11	****
uch typing tutor	NBS	CLU03	Teach yourself touch typing	17	
ack Display	GTS	Utils1	Shows position of drive heads	10	
ilight Zone	Fred Fish Fred Fish	782 Fish 850	After Dark-like screen blanking utility Unix-like directory movement	24 27	
xDirs	Fred Fish	721	Organise your video collection	20	***
R Tape Filer usZ	Fred Fish	786	Virus Killer	26	
ordFinder-Plus	Virus Free PD	Licenseware	Crossword puzzle solver	21	****
ords 3	AmigaNuts	Licenseware	Solve anagrams	9	
Stitch	Deja Vu	Licenseware	Pics to knitting patterns	19	2 19
Search	Fred Fish	804	File searching utility	26	***
search	ried riait	004	The sourching durity	20	
DMMS UTILITIES					
11 1.35	fred Fish	825	Intuition-based archiving toll	27	****
BBBS	Fred Fish	729	Bulletin Board System	20	
HA 1.11	Fred Fish	593	Archiving utility	13	
Comm	17Bit	1275	Terminal Program	7	****
hone Line Watcher	TBAG	58	Keep track of phone bill	9	****
erm 3.1	Fred Fish	Fish 831-833	Best Amiga comms program available	27	*****
ROGRAMMING UTILITIES					
cc Assembler	AmigaNuts	TO THE ASSESSMENT OF THE	Fast Assembler	6	*****
miga E	Fred Fish	Tay seed to be be being	Programming language compiler	26	****
miga Pascal	Fred Fish	Fish 849	Amiga version of Pascal language	27	****
Ref	Fred Fish	494	BASIC cross referencing utility	9	****
opper Master	AmigaNuts	1083	Generate Copper Lists	5	BHOME
NCE	Fred Fish	443	C Compiler	3	
PU	Fred Fish	721	Hex disk and file editor	20	****
rac	AmigaNuts	1251	Adventure game creator	18	****
adTool Box	Fred Fish	Fish 731	Create Intuition font ends	22	*****
Calc	Fred Fish	Fish 742	Brilliant Shell-based calculator	22	*****
MIDI Library	Fred Fish	227	Program MIDI applications	9	*****
Map Editor	AmigaNuts	PARTY TO THE SHEET	Map editor for AMOS	19	
MegaEd	Fred Fish	Fish 743	Powerful text editor	22	*****
MemSnap	Fred Fish	Fish 826	Trace lost allocated memory pools	27	****
MinTerm	Fred Fish	Fish 560	Calculate blitter minterms	28	****
NorthC	AmigaNuts	1112	C Compiler	6	****
PCQ Pascal	AmigaNuts	1113	Pascal compiler	6	****
Power Logo	EdLib	24	Enhanced Logo Interpreter	9	
Remm and Rams	Deja Vu	Licenseware	Map editor and scroller utilities	17	***
Stripit	Fred Fish	Fish 750	Strip comments from ascil source code	22	
GRAPHICS UTILITIES					
3D Objects Disk 1	AmigaNuts	THE RESERVE	Collection of Sculpt Objects	8	****
BDFont	17Bit	1007	Text to Sculpt Object	3	***
AMOS Paint	Deja Vu	83	Paint package	3	***
BezSurf 2	Fred Fish	315	Create shaded 3D objects	10	
CMDemo	Fred Fish	Fish 757	Demo of ASDG's CineMorph	23	
Converters	17Bit	1221	Image conversion tools	9	TE ET A TO TE A TO
DPaint Tutorial	Soft Express	U160	Comprehensive DPaint tutorial	22	*****
Deluxe Draw	Slipped Disk	18	Paint package	3	
Desktop video pack 2	Anglia PD	William Control of the Control of th	Various DTV utilities inc titler	17	
DrawMap	Fred Fish	315	Generate maps of the world	10	***
FracScape	Various	-	Fractal landscape generator	18	*****
HAMLab	AmigaNuts	1149	Image processing	3	
mageLab	PDSoft	V518	Image processing program	12	****
LandBuild	AmigaNuts	1190	Fractal landscape generator	9	Control of the second
Mandel Mountains	Softville	751	Creates 3D Mandelbrots	5	****
MapTrix	Fred Fish	Fish 853	Fractal texture mapping utility	28	*****
PictSaver	Fred Fish	543	Grab screens in IFF Format	9	*****
Plasma	Fred Fish	573	Fast fractals program	11	
SkyPaint	TBAG	37	Text-based graphics	3	***
SlideShow Kit	VirusFree	1465	Create your own slideshows	3	****
SpectraPaint	Slipped Disk	19	Paint package	3	
Sprite Designer	AmigaNuts	1102	Create animated sprites	0	A Red See !! - God
Vector Designer	AmigaNuts	4400	Vector graphics designer	9	
Video Text Displayer	AmigaNuts	1199	Basic text scroller	9	
EDUCATIONAL SOFTWARE					
	DD 6-8	V730	Demonstrates 4 strates and a	10	****
4 Stroke Engine	PD Soft	V738	Demonstrates 4 stroke engine	19 26	
CPK Complete Bible	Fred Fish PD Soft	809 V715-717	Create rendered molecule illustrations Complete Bible on three disks	19	****
Complete Bible	Astronomy News	4170-171	Info on stellar constellations	20	***
Constellations	fred Fish	Fish 854	Function plotting utility	28	
Drafu		LPD13	Maths/Logic	5	
JigMania Learn&Play	Deja Vu Riverdene	Mis637	Maths/Logic Maths/Reflex/Logic	5	****
Learn&Play MathPlot	Fred Fish	Flsh 850	Mathematical function plotter	27	****
MathPlot Maths Reflex	Anglia PD	C728	Test your maths	20	
Maths Renex Maths4Fun	AmigaNuts	1146	Maths	9	****
	Deja Vu	LPD21	3 'R's	5	***
Quingo	Deja vu DTP	0S125	Mystic runes explained	18	***
Runes		GAM907	Maths/Logic	5	****
Shapes	Riverdene Dela Viv				
Simon	Deja Vu	APD135	Reflex/Memory	5	Bostres will
Space Maths	Deja Vu AmletaNute	APD135	Maths	9	****
Spell4Fun	AmigaNuts	1146 LPD18	Spelling	5	
TouchStones	Deja Vu	APD2	Logic Maths/Logic	5	***
Treasure Search	Deja Vu Asgard Software	Freeware	History of World War 2	21	***
WarBook ChemBalance	Fred Fish	Fish 759	Balance chemical equations	23	****
	AmigaNuts	1146	Maths	0	*****
XTables		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	THE PROPERTY OF THE PROPERTY O		

FOR SUPPLIER INFORMATION ON ALL THE PRODUCTS LISTED ABOVE SEE UK PD HOUSES PAGE 120

BUYING ADVICE FOR SHOPPERS

Whether you're buying over the phone or at a local store, here's our advice on getting what you want.

BUYING IN PERSON

- · Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.
- · Make sure you have all the necessary leads, manuals or other accessories you should have.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
- . Check the price you are asked to pay, and make sure that it's the same as the price advertised.

- . Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you use to buy, you are entitled to return a product if it fails to meet any one of the following three criteria:

The goods must be of "merchantable quality".

- They must be "as described".
- They must be fit for the purpose for which they were sold or for the purpose you specified when ordering. If they fail to satisfy any or all of the criteria, then you are then entitled to:
- · Return them for a refund.
- Receive compensation for part of the value.
- · Get a replacement or free repair. When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim your money back from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profitmaking operations. AS

ADVERTISERS INDEX

st Computer Centre34-3	35
miga Format122-12	
miga Format Specials	- 1
miganuts1	- 1
mivision	
nglia PD1	
nim 1 PD1	
rnor	
rtworks	52
& T Fonts	- 1
righton Computer Supplies	- 1
P PD1	
coombe Valley60,	10
Sumana	
)TBS1	
)igitaIE	3C
irect Computer Supplies	
)iskovery1	
xpress PD1	
airbrothers	60
ive Star PD1	
ujitsu	
uture Leisure Books74,1	4
VB PD1	
Gasteiner42-	
Grapevine	44
lobbyte50-	51
ndiIFC, 4	
npholink	
ust Amiga Monthly	52
ust Amiga Monthly1	
Kew=II1 Kingsway Computers	14
(ew=II1	14 66
Kew=II1 Kingsway Computers1	14 66 60
Kew=II1 Kingsway Computers Kosmos	14 66 60 60
Kew=II1 Kingsway Computers	14 66 60 60 08
Kew=II	14 66 60 60 08 44
Kew=II	14 66 60 60 08 44 66
Kew=II	14 66 60 60 08 44 66 15
Kew=II 1 Kingsway Computers 2 Kosmos 3 Lola 4 Meedmore 1 Micro Centre 3 Mr Thompson 1 MJH 1	14 66 60 60 08 44 66 15
Kew=II 1 Kingsway Computers 2 Kosmos 1 Lola 1 Meedmore 1 Micro Centre 1 Mr Thompson 1 VD Soft 1	14 66 60 60 08 44 66 15 13
Kew=II	14 66 60 60 08 44 66 15 13 25 31
Kew=II 1 Kingsway Computers 2 Kosmos 3 Lola 4 Meedmore 1 Micro Centre 3 Mr Thompson 4 NJH 1 Phoenix Computer World 24	14 66 60 08 44 66 15 13 25 31
Kew=II	14 66 60 08 44 66 15 13 25 31 14 57
Kew=II	14 66 60 60 08 44 66 15 13 25 31 14 57 66
Kew=II	14 66 60 60 08 44 66 15 13 25 31 14 57 66 05
Kew=II	14 66 60 60 08 44 66 15 13 25 31 14 57 66 05 19
Kew=II	14 66 60 60 08 44 66 15 13 25 31 14 57 66 05 19 75
Kew=II 1 Kingsway Computers 1 Kosmos 1 Jola 1 Meedmore 1 Micro Centre 1 Mr Thompson 1 Phoenix Computer World 24- Power Computing 0BC,30- Seasoft 1 Selectafont 1 Software Demon 18- Softwood 73, Switchsoft 1	14 66 60 60 08 44 66 15 13 25 31 14 57 66 05 19 75 08
Kew=II	14 66 60 60 08 44 66 15 13 25 31 14 57 66 05 19 75 08 52
Kew=II 1 Kingsway Computers 1 Kosmos 1 Meedmore 1 Micro Centre 1 Mr Thompson 1 Phoenix Computer World 24- Power Computing 0BC,30- Geasoft 1 Selectafont 1 Software Demon 18- Softwood 73, Switchsoft 1 fec-nol 1	14 66 60 60 60 15 13 25 31 14 57 66 05 19 75 08 52 76
Kingsway Computers Kosmos Kosmos Kosmos Kosmos Kosmos Kosmos Kola Keedmore Korro Centre Korro Ce	14 66 60 60 60 15 13 25 31 14 57 66 05 19 75 08 52 76 57
Kingsway Computers Kosmos Cola Meedmore Micro Centre Mr Thompson MJH D Soft D Soft 1 Cower Computer World Cower Computing Computing Color	14 66 60 60 60 8 44 66 15 13 25 31 14 57 66 05 19 75 08 57 14 44
Kingsway Computers Kosmos Cola Meedmore Micro Centre Mr Thompson MJH D Soft D Soft 1 Cower Computer World Cower Computing Computing Color	14 66 60 60 60 8 44 66 15 13 25 31 14 57 66 05 19 75 08 57 14 44
Kingsway Computers Kosmos Jola Meedmore Micro Centre Mr Thompson JH D Soft D Soft 1 Phoenix Computer World Cower Computing D Soft 1 Selec Software Selectafont Silica 65,83,89,91,97,1 Software Demon 18- Softwood 73, Switchsoft 1 Fec-nol Frilogic //ideoworld	14 66 60 60 60 60 15 13 25 31 14 57 66 05 19 75 08 52 76 57 14 08

BUYINGBYMAIL

- . Before you send any money, ring the supplier to confirm that the item you want is in stock and when the delivery is likely to be made. Enquire about returning unwanted goods and the supplier's refund policy. Find out about hidden extras like postage and packing charges, and whether the prices quoted include VAT.
- Beware of companies that do not include an address in their adverts.
- . If ordering goods of more than £100 in total value, always try to use a credit card - if anything goes wrong, you will be legally entitled to claim against the credit card company, even if the retailer has gone bust. You may also get extra insurance - check with the credit card company.
- Always buy from the most recent issue of Amiga Shopper.
- · When your order arrives, check everything carefully. If anything is missing, don't use the product at all - contact the supplier immediately. If something doesn't work, make the obvious checks such as the fuse, but don't try to fix the product.
- · If a problem does arise, contact the supplier in the first instance and calmly and politely explain your problem. In most cases these things are merely a mix-up or a misunderstanding that the supplier will happily put right. If you think you have a genuine grievance that has not been resolved, you might consider contacting your local Trading Standards Officer (the number will be in the phone directory - check the local council listing).
- Always keep records of correspondence with any mail order company you deal with and also make a note of where and when you saw the product advertised. False or misleading advertising is an offence, and suppliers must stick to what they've said in adverts.

Issue 33 – January 1994

Cliff Ramshaw Editor: **Mark Nottley** Art Editor: **Alex Soboslay** Production Editor: Cliff Ramshaw Staff Writer: Jeff Walker, Mark Smiddy, Consultant Editors: Ian Wrigley Contributors: Jason Holborn, Gary Whiteley,

Dave Winder, Toby Simpson, Richard Baguley, Wilf Rees, Steve McGill, Nick Veitch Stuart Baynes, Rob Scott Photography: **Margaret Clarke** Ad Manager: Tracy O'Donnell Ad Production Manager:

Lisa Withey Ad Design: **Production Technicians:** Jon Moore, Mark Gover, Heath Parsons, Simon Windsor, Chris Stocker

Group Production Manager: Judith Middleton Production Controller: Claire Thomas **Ginette McKeown Production Control Assistant: Fiona Deane** Paper Controller: Suzannah Angelo-Sparling Admin Assistant:

Group Publishing Director: Band of the month: **Member of the Audit Bureau of Circulations**

Audited circulation

January - June 1993: 45,290 Printed by Southernprint Ltd, Poole, Dorset ISSN 0961-7302 Printed in the UK Jon Bickley Circulation Manager:

News Trade Distribution -

Publisher:

ABC

UK: Future Publishing 0225 442244 Worldwide: MMC Ltd 0483 211678

Stuart Anderton

The Rainmakers

Greg Ingham

Copyright @ 1993 Future Publishing Ltd. No part of this magazine may be reproduced without written permission. We welcome contributions for publication but regret that we cannot return any submissions. Any correspondence will be considered for publication unless you specifically state otherwise, and we reserve the right to edit letters published.

Amiga Shopper recognises all copyrights contained in this issue. Where possible we have acknowledged the copyright older. Please contact us if we have failed to credit your copyright - we will be happy to correct any oversight.

Editorial: 30 Monmouth Street, Bath, Avon BA1 2BW □ 0225 442244 Fax: 0225 446019 E-mail: amshopper@cix.compulink.co.uk

Advertising: Rayner House, 23 Higher Hillgate, Stockport SK1 3ER. = 061 474 7333 Fax: 061 476 3002

Subscriptions: Future Publishing, Somerton, Somerset TA11 6TB. = 0458 74011



Your Guarantee of Value This magazine comes from Future Publishing, a company founded just eight years ago but now selling more computer magazines than any other publisher in Britain. We offer:

Better advice. Our titles are packed with tips, suggestions and explanatory features, written by the best in the business.

Stronger reviews. We have a cast-iron policy of editorial independence, and our reviews give clear buying recommendations.

Clearer design. You need solid information, and you need it fast. So our designers highlight key elements in the articles by using charts, diagrams, summary boxes, annotated photographs and so on.

Greater relevance. At Future, editors operate under two golden rules:

. Understand your readers' needs.

· Satisfy them.

More reader interaction. We draw strongly on readers' contributions, resulting in the liveliest letters pages and the best reader tips. Buying one of our magazines is like joining a nationwide user group.

Better value for money. More pages, better quality: magazines you can trust.

The home of Britain's finest computer magazines: Amiga Shopper, Amiga Format, Amiga Format Specials, Amiga Power, PC Answers, PC Plus, Sega Power, Mega, Commodore Format, PCW Plus, ST Format, GamesMaster, Amstrad Action, PC Format, Total!, Super Play, Edge, MacFormat, Future Music, Sega Zone and Game Zone

IN NEXT MONTH'S ISSUE

i File Edit Format Font Document Utilities Window

福曜 ナ オ サ

AMOS Action

/The Amiga world

If the latest installment of Jason Holl:

creative juices flowing, there's good :

Open Header...

Open Footer...

Repaginate Now

Insert Graphics

Insert Index Entry

Insert TOC Entry

Insert Table...

Insert Page Break 🚓

Footnote...

Page Diew

when AMOS was the only serious option for programmers that couldn't quite handle the throught of having to wade through more complicated languages

like C and assembler to produce the same sort of results, but times are

indeed changing. Now that Blitz Basic 2 is out on the market (thanks to our

the Amiga, and wonder if we really need it anyway?

Microsoft Word, probably one of the best word processors

on any system. Next month we ask if we'll ever see it on

erhaps one of the most annoying things about being an Amiga owner is the knowledge that the PC, a machine inferior to the Amiga in just about every respect, has gained much wider acceptance in the commercial world.

Okay, the Amiga's certainly king when it comes

to video and graphics work, but most businessmen wouldn't even consider it when looking for a machine to run a database, word processor or desktop publishing package.

Why should we care which machine some be-suited businessman buys, I can almost, by virtue of the cosmic aither that binds us all. sense you asking? Simply because if more of them were buying Amigas, we'd

be seeing lots more decent software for the thing. That's not to say that there isn't some decent Amiga software - there is - but let's face it, it doesn't really compete with the sort of stuff available for the Mac or PC.

Next month we're going to be appraising this situation. We hope to talk to the big boys at Microsoft and Quark (makers of Word and XPress

WIN A YEAR'S FREE SUBSCRIPTION

What were the ingredients for the spaghetti sauce made by Clamenza in the film of The Godfather? Send your answers to "Tomatoes certainly", Amiga Shopper, 29 Monmouth Street, Bath BA1 2DL. The closing date is Tuesday 7 December. The first correct answer wins. Last month's winner is Vicki Baldwin of Finchley. The answer was: David Janssen.

respectively) and ask them if they have any plans to port their programs to the Amiga. And if not, why not? We'll also be analysing how easy such a port would be.

There's another side to the coin that we'll be considering, too. Do we really need these programs when the new breed of Amiga software - Final

I Company

Writer, PageStream 3 and Wordworth 3, for example - are looking so good? We'll be reviewing the first of these, previewing the other two, and assessing just how well they compare with the competition on Mac and PC. Part of the reason

such top-quality software is available for the Amiga is because Commodore, with the A1200, have raised the power of the base Amiga.

Software manufacturers can be sure that there are a large number of potential users out there with powerful machines. Consequently, they can afford to make software that relies on this power. Next month's feature will be taking a look at what else Commodore could be doing to help.

Tuesday 4 January, and jolly good it will be too. (AS)

Issue 34 of Amiga Shopper goes on sale

YOU'VE WON!

The ten winners of November's Score Some Speed competition are: G Collwill of Bristol, A Daniel of Sheffield, J Richardson of Cambridge. C Parkes of Basingstoke, J Rumball of Wigston, H Pelly of Haverhill, S Restorick of Liverpool. D Woolnough of Beccles, R Nurdern of Risca near Newport and M Cavers of Duns in Berwickshire. Congratulations.

Each wins a copy of the AMOS Pro

Compiler, courtesy of Europress Software.

AMIGA SHOPPER SELLS LIKE DON CORLEONE'S OLIVE OIL - SO MAKE SURE YOU RESERVE A COPY AT YOUR LOCAL NEWSAGENT NOW!

nich goes on sale on Tuesday 4 January. Ime	
dress	
of the state of th	
one	The state of the s

AMIGA

AT-A-GLANCE GUIDE

To help you find what you want quickly and easily, here is a cross-referenced list of everything covered in this month's Amiga Shopper. You'll find a detailed index to the problem-solving Amiga Answers section on page 37. The page numbers given are for the first page of the article in which the subject is mentioned.

ACC Hardware Manual

ACC Hardware Manual	64
AccuTrans 3D	86
Alpha Power Hard Drive	78
AmigaDOS	109
AMOS	101
ASIM CDFS	88
Award Construction Kit	82
Blitz Basic	55
Buying Advice	128
C Programming	53
Caligari	28
CanDo AGA	67
	130
Competition	
Cover Disk	12
CSA 12 Gauge	64
Cygnus Ed Pro	36
FrameStore	17
GigaMem	61
Image Engine	20
ImageFX	26
KCS Floppy Drive	79
Letters	104
Macro 68	62
Megamouse	77
Microvitec Monitor	33
MultiFaceCard 3	77
Music And MIDI Video	69
Music Librarian	69
NCommand Pro	61
News	9
Nexus Backgrounds	12, 32
1942 Monitor	32
	70
One Stop Music Shop	
PC Task	87
Picasso II	27
Prime Image Converter	14
	30, 81, 82
Product Locator	125
Public Domain	111, 125
Reader Ads	96
Reference Hard Drive	78
Resource	62
RPaint	33
Single Frame Controller	29
Studio	72
Subscriptions	98
True Print/24	72
Turbotech A41200	95
User Groups	93
Video Toaster	14
Vidi Amiga-12 AGA	22
Wordworth AGA	36
XCAD	85
X-Copy	94
X-Stitch	95
A-Suton	33

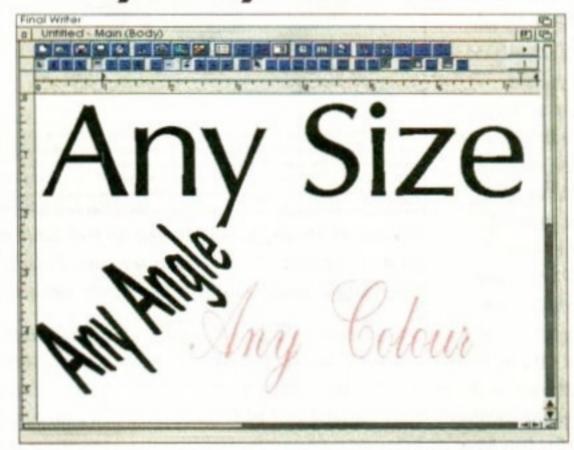
Are there any products or subjects you'd like us to take a look at? Well, just drop a line to: Amiga Shopper,

30 Monmouth Street, Bath, Avon BA1 2BW.

WIN • WIN • WIN • WIN • WIN

A new breed of word processor

We've got ten copies of SoftWood's brand new Final Writer word processor, each worth £129.95, to give away. All you have to do is answer the questions.



Final Writer gives you the sort of typographical control that you'd normally expect from a DTP package.

arrival of Final
Writer, the latest
addition to
SoftWood's range of word
processors, back in issue 32. Then
we reckoned it could well be the
first of a new breed of serious
software for the Amiga. Well, now's
your chance to decide for yourself.

We've got ten copies of the package to give away, each kindly donated by the good folk at SoftWood Europe, and each worth £129.95. And one of them could be yours for little more than the price of a stamp and envelope, and a few moments of your time.

So what can we say about Final Writer to whet your appetite? We could mention that it's going to be the new top-of-the-range word processor from SoftWood, with many more features than the company's already renowned Final Copy program. And we could mention some specific features.

Tell you what – let's mention some specific features...

For a start, the program can be driven almost exclusively via clicking on buttons contained in a tool bar (a means of operation that should be more than familiar to *Deluxe Paint*

users). You can switch between several tool bars depending on the kind of document you are using. They are also all customisable.

The customisability (great word, eh?) of the program doesn't end there. It will also enable you to create macros to automate common layout procedures.

But that's not

e announced the arrival of Final Writer, the latest addition to

all. Oh no. Final Writer is fully PostScript-compatible. Not only will it print to a PostScript printer, but it will also send PostScript fonts (it comes

supplied with over 110 of them) to other printers too.

A number of structured drawing facilities are provided in the package, and it is capable of importing graphics in both Amiga IFF and Encapsulated PostScript Format (the latter type being scalable). Just to get you going, Final Writer comes with 100 clip art images.

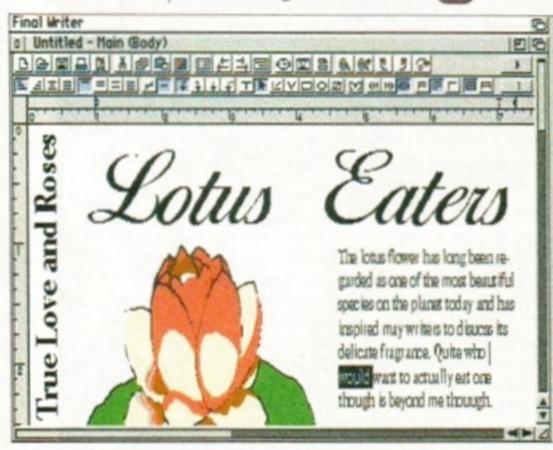
To win, answer

the questions in the box. Send your answers written on the back of a postcard (or a sealed envelope), along with:

- 1. your name and address,
- which, if any, word processor you currently use, and
- 3. what two features you need most from a WP, to this address:

Write on
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL

The closing date for entries is Friday 7 January. The first ten correct entries drawn from the editor's receptacle will win. Send only one entry per household and please state if you don't want your name included on a mailing list. The competition is not open to employees of Future Publishing or SoftWood.



It goes without saying that high quality colour graphics and text can be freely mixed in the same document.

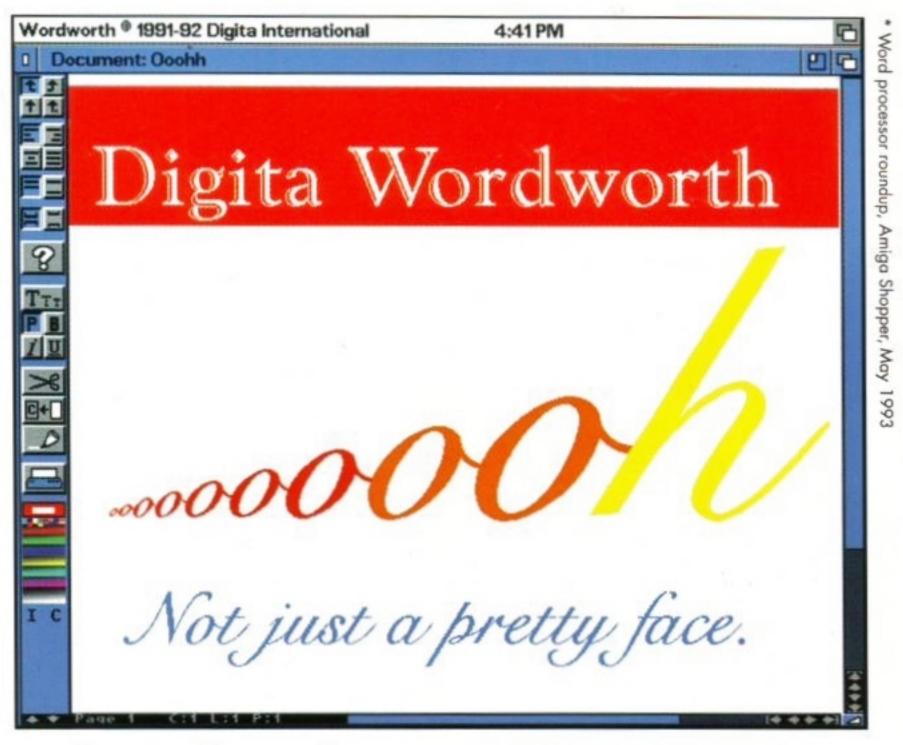
THE QUESTIONS

- 1. Who wrote A Christmas Carol?
- (a) Umberto Eco
- (b) Charles Dickens
- (c) Gustav Flaubert
- 2. Who wrote the stylistic classic Madame Bovary?
- (a) Umberto Eco

- (b) Charles Dickens
- (c) Gustav Flaubert
- 3. Who wrote the review of Final Copy back in Amiga Shopper 25?
- (a) Umberto Eco
- (b) Charles Dickens
- (c) Jeff Walker

WIN - WIN - WIN - WIN - WIN

Vine reviewed One winner

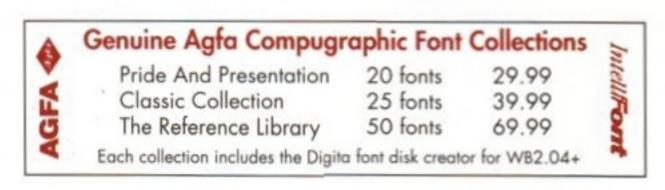


(Just thought you'd like to know)

If you want to know more about award-winning Wordworth...



Voted Best Word Processor "A good length clear of the field" "The ultimate in word processing power" Voted Best Word Processor "Inspirational, that's the word" or Agfa Compugraphic font and clip art collections...



call 0395 270273 or write to Digita FREEPOST Exmouth EX8 2YZ England



Digita International Limited

Black Horse House

Exmouth EX8 1JL

England

Telephone 0395 270273

Facsimile 0395 268893

-A member of the Digita group-

Power Computing's latest 32-bit memory expansion for the Amiga 1200 is now available. The PC1208 combines exceptional value with incredible features. The original PC1204 4MB 32-bit memory expansion is still available, and is exceptional value.

Simm Technology - The PC1208 uses the latest industry standard 32-bit SIMM technology which allows you to use 1MB, 2MB, 4MB and 8MB modules.

Zero Wait State - The PC1208 never leaves the processor waiting around for data, Meaning your Amiga 1200 will run at its maximum speed. Simply adding either a PC1204 or PC1208 to your Amiga 1200 will increase its processing speed by 219%.

Real-Time Battery Backed Clock - Allows files to be date-stamped with the correct time and date so that you know exactly when they were created.

Ultra Fast FPU - With the addition of a maths co-processor intensive maths operations will be accelerated by up to fifty times. The PC1208 is the only memory expansion which offers the capability to take either PGA or PLCC type FPU's.

Easy To Fit - Fitted in minutes without the need to remove the computer's case. Does not effect your warranty.

PCMCIA Friendly - Unlike other expansion boards the PC1208 does not conflict with your Amiga 1200's card slot, using the PCMCIA friendly jumper even an 8MB SIMM can be used.

PC1204 with 4MB RAM

PC1204 with 4MB	only	£185.95
PC1204 + 68881	20Mhz Co-Processor	£219.95
PC1204 + 68882	20MHz Co-Processor	£235.95
	33MHz Co-Processor	£259.95
PC1204 + 68882	40MHz Co-Processor	£279.95
PC1204 + 68882	50MHz Co-Processor	£319.95

PC1208 with a choice of bare, 2MB, 4MB or 8MB RAM Bare PC1208 with 2MB

PC1208	£69.95
PC1208 + 68881 20Mhz	£96.95
PC1208 + 68882 20MHz	£109.95
PC1208 + 68882 33MHz	£119.95
PC1208 + 68882 40MHz	£139.95
PC1208 + 68882 50MHz	£179.95

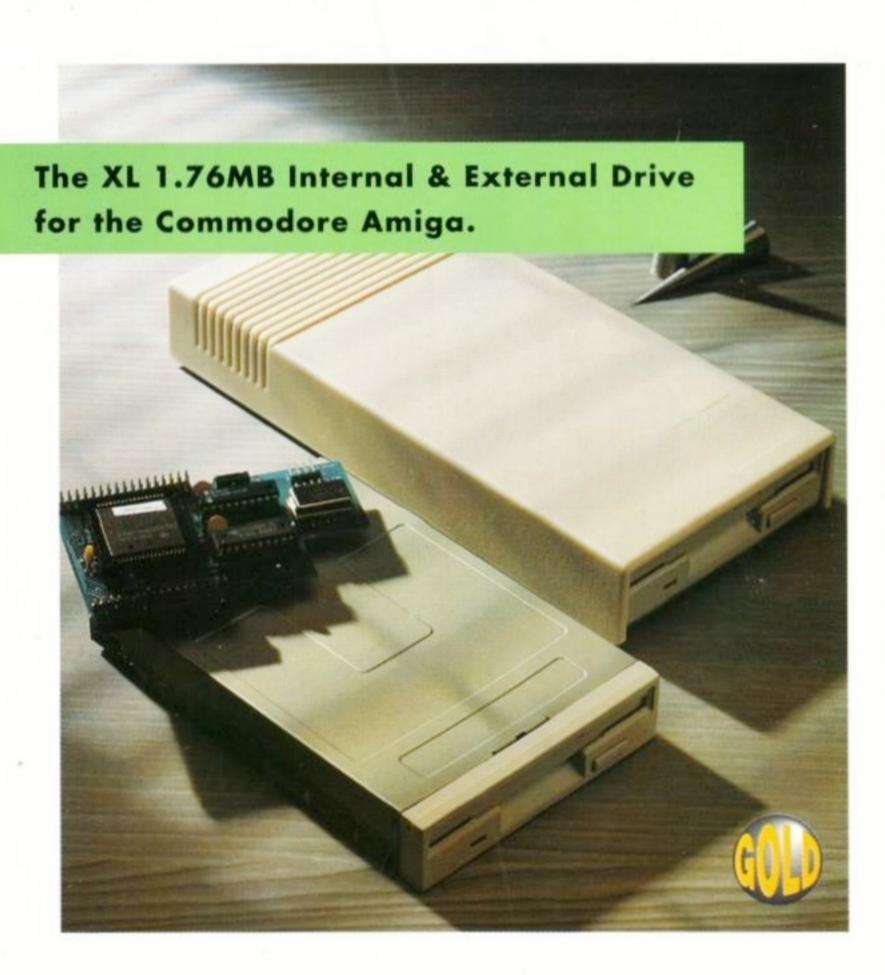
FC1200 + 00002 30MHZ	
PC1208 with 4MB	
PC1208 + 68881 20Mhz	£240.95
PC1208 + 68882 20MHz	£269.95
PC1208 + 68882 33MHz	£285.95
PC1208 + 68882 40MHz	
PC1208 + 68882 50MHz	

PC1208	+ 68881	20Mhz£139.95
		20MHz£159.95
PC1208	+ 68882	33MHz£199.95
PC1208	+ 68882	40MHz£225.95
PC1208	+ 68882	50MHz £265.95

PC1208 with 8MB	
PC1208 + 68881 20Mhz	£419.95
PC1208 + 68882 20MHz	£439.95
PC1208 + 68882 33MHz	£465.95
PC1208 + 68882 40MHz	£489.95
PC1208 + 68882 50MHz	£530.95

The PC1204 & PC1208 Memory Expansion for the Commodore Amiga 1200.





Power Computing's XL 1.76MB Drive* for any Commodore Amiga is now available. The XL Drive includes these many features:

Formats to 1.76MB - Using high density disks you can fit a massive 1.76MB on each disk.

Acts as a standard drive - Insert an 880K Amiga disk and the drive behaves like any other Amiga drive.

Fully compatible - Will read and write disks written on an Amiga 4000 internal high density drive.

Compatible with PC disks** - Also read and write high density PC disks using a suitable device driver.

Compact size - No larger than a standard 880K floppy disk drive.

High quality design - Uses a high quality Sony high density mechanism.

Easy to Fit - The external XL Drive simply plugs into the floppy drive port at the rear of your Amiga. The internal XL Drive simply replaces or adds to your existing drive(s). These drives can be installed in minutes and no soldering is required.

Software compatible - The XL series is fully compatible with all existing hardware and software.

Internal XL Drive £85.00
Internal XL Drive £75.00
A4000 Internal XL Drive £75.00

*Requires Kickstart 2 or above. **Requires Workbench 2.1 or above.

Next day £5, 2-3 days £2.50 Saturday delivery £10

Specifications and prices subject to change without notice All Trademarks acknowledged. VAT included. E & OE



Power Computing Ltd

Unit 8 Railton Road Woburn Road Industrial Estate

Kempston Bedford MK42 7PN

Tel 0234 843388 Fax 0234 840234

SUBSCRIBE NOW RING THE HOTLINE ON 0458 74011

Please tear off and send to Amiga Shopper subscriptions, Future Publishing, FREEPOST, Somerton, Somerset TA11 7BR. (No stamp required.)

Yes! I would like to subscribe to Amiga Shopper for 12 issues and receive my free binder (worth £4.95).

12 issues and receive my free	binder (worth £4.95).	
(Please tick one box only)	SUBSCRIBE USING	
UK direct debit £30 (Complete the form	THE DIRECT DEBIT	
UK subscription £35	SAVE £5	
European Community subscription £47		
Rest of World subscription £67		
Please debit my Visa/Mastercard with £ I enclose a cheque payable to Future Publis (cheque must be in Sterling drawn on a UK)	hing for £	
Signed	Date	
Card No	***************************************	
Expiry date	***************************************	
Name	Name	
Address		
•••••		

** ************************************	Postcode	
Offer expires 10th January 1994	AS/SC/1/94	
This card instructs your bank or building society to make payments direct from your account. Please complete all five items and then send to us as directed overleaf. (Banks and building societies may refuse to accept instructions to pay direct debits from some types of accounts.)	2. Account no 3. Sort code 4. Account in the name of:	
Please write the full address of your branch	Instructions to bank/building society I instruct you to pay direct debits from my account at the request of Future Publishing Ltd. The amounts are variable and may be debited on various dates. I understand that Future Publishing Ltd may change the amounts and dates only after giving me prior notice. I will inform you in writing if I wish to cancel this instruction. I understand that if any direct debit is paid which breaks the terms of this instruction, you will make a refund.	
To: The ManagerBank/Building Soc.		

NO STAMP REQUIRED

Amiga Shopper Subscriptions
Future Publishing
FREEPOST
Somerton
Somerset TA11 7BR

THE BENEFITS OF DIRECT DEBIT

- By taking out your subscription on direct debit you can save £5, taking the price down to just £30 for your 12 issue subscription.
- You will still be able to claim all your subscription benefits.
- A further plus is that you won't have the bother of resubscribing when your subscription runs out. You'll be able to continue to receive Amiga Shopper as long as you wish.
- And remember, you can still cancel your subscription and your direct debit mandate – at any time. We will refund without question all payment for unmailed copies.
- To subscribe by direct debit simply complete the other side of this card in full and return this entire card in an envelope to the address above – no stamp required.
 - **Please note:** The wording overleaf is in the standard form requested by the banks. What will happen is this: as soon as the paperwork has gone through, we will request your branch to pay the reduced rate of £30 from your account to cover your subscription.
- When your subscription is due for renewal, we will give you at least 14 days notice and advise you of the amount to be paid from your account so you can continue to receive Amiga Shopper without interruption.